

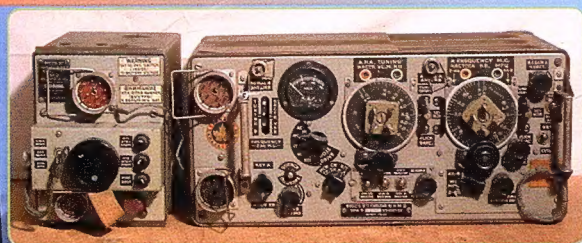
# Amateur Radio

Volume 86  
Number 4 ► 2018  
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## Military radio operators



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04





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# Amateur Radio

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### This month's cover:

The cover features the portable station set up  
by Alex VK2PRC in a park in Campbelltown for  
his participation in the Australian Military Radio  
Operators weekend. Many of the participants used  
ex-military radio equipment. Read all about the event  
in the story commencing on page 17.  
Photo by Alex Ball VK2PRC.



## Contributions to Amateur Radio



Amateur Radio is a forum for  
WIA members' amateur radio  
experiments, experiences,  
opinions and news. Manuscripts  
with drawings and/or photos are  
welcome and will be considered  
for publication. Articles attached to  
email are especially welcome. The

WIA cannot be responsible for loss or damage to any material.  
Information on house style is available from the Editor.

### Back Issues

Back issues are available directly from the WIA National Office  
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### Photostat copies

If back issues are unavailable, photocopies of articles are  
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### Disclaimer

The opinions expressed in this publication do not necessarily  
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responsible for incorrect information published.



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A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

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## Editorial

Peter Freeman VK3PF

### Communications and Reporting

I did not make it to the AGM in May, with several factors contributing to my decision to not make the trip. Had I been at the meeting, I would have raised concerns about some of the claims made in the Strategy Advisory Committee (SAC) report in the Open Forum Reports document, which became available on the WIA website only a couple of days prior to the AGM.

I raised my concerns regarding the content of SAC report with the Board via the President and Secretary, which initiated lots of discussion. Several days later, the SAC report was withdrawn from the Open Forum Reports document on the WIA website. Following further discussions, the SAC released a statement of clarification via the WIA website and in an email to all members. This statement is included in this issue's WIA News column.

Whilst a volatile situation has been defused, I have significant concerns regarding the situation which led to the preparation and publication of the SAC report. SAC had been discussing this journal and its content without having made little if any effort to determine any real facts regarding Publications Committee (PubCom) and the production of *AR* magazine, as far as PubCom is aware. Members of SAC had been making announcements in WIA News Broadcasts about changes that were about to be introduced to *AR* magazine. All of this occurred with no consultation with PubCom – the first time that PubCom members were aware of these foreshadowed changes was when the public statements were made. Discussions

between SAC and PubCom only commenced after the issues concerning the SAC Report were raised by PubCom. At least we now have started to discuss what might occur.

I guess that some may find my attitude to be old fashioned. I would expect any organisation (or a part of that organisation tasked with the responsibility) intending to develop ideas for change to first expend a little effort in researching the current status quo. In my view, one needs to understand where you are currently situated prior to discussing future directions.

In an organisation with multiple components, understanding your current foundations is a prerequisite to any planning process. In an organisation where much of the work is undertaken by volunteers, those volunteers must participate in the change process – you cannot simply impose change from above. I am not suggesting that those undertaking the tasks are resistant to change, rather that if you engage them in the change processes, you are more likely to reach a good endpoint. The key here is something which our hobby is all about: communication!

### Contribute to your journal

I often make the same request via this Editorial: please contribute your stories and projects to the magazine. Yes, it may take some time between submission and the story appearing in print, but we rarely reject articles. We can assist you in your preparation tasks. As a starting point, read through the

Continued on page 4





## Board comment

*Justin Giles-Clark VK7TW*

At the WIA Radio and Electronics Convention – Beyond 2020 in May the Board presented a vision for the future of amateur radio in Australia. By placing a future and then reflecting on the achievements of the past an array of aspirations can be identified.

The future was split into four areas:

1. Regulatory Framework
2. Spectrum
3. Training and Education
4. Knowledge Economy

Under the regulatory framework heading we dreamt about the new Radiocommunication Act being in place and all amateur radio operators having a 20 year parameter based licence. One of the key opportunities of this new arrangement is greater self-determination of our hobby. Deregulation is and will be a key opportunity for the WIA and a lever that regulators can pull to lessen their administrative and management overheads. This means that we need to ready for greater responsibility and accountability in the future. This may be in the form of an amateur radio Code of Practice. The code can take many forms and it would become the key instrument that we as amateurs can demonstrate to the regulator that we can self-manage and self-determine our future.

In the spectrum space we will see the rapid development of a digitally enabled radio frequency landscape and a band plan to support that landscape. High levels of interference will be the norm and amateurs will be developing and employing novel technical solutions to overcome these limitations. We

are already seeing these innovative solutions with FreeDV and WSJT. The high suburban noise levels will see virtual or remote shacks spring up everywhere. These remote shacks will be one of the main products that amateur radio clubs offer their members. The noise level in suburbia may actually mean that listening to the spectrum will become a novel past-time! The WIA will have its own frequency assigners who assist clubs and amateurs to find, analyse and register frequencies for repeaters, beacons and experimental modes.

Training and education in the future will facilitate the democratisation of amateur radio. This will mean breaking down many barriers to anyone becoming an amateur radio operator and experimenter. All assessments and training will be performed online with virtual invigilators. There will be well defined academic pathways that link amateur radio training to professional occupational paths. Amateur radio will be the stepping stone into a fulfilling technical occupation. At primary and secondary schools, student will be able to see the value that amateur radio contributes through the Science Technology Engineering and Mathematics (STEM) curriculum. This may translate into them considering a possible hobby of amateur radio. The WIA can tap into STEM grants to supplement main stream STEM education and training programs in primary and secondary schools. The WIA becomes a source of a broad range of education and training materials.

The knowledge economy is where growth is dependent on the

quantity, quality and accessibility of information rather than the means of production. Knowledge technology where human knowledge is incorporated into machines is particularly relevant. The future sees amateur radio as a valuable contributor to this economy. Amateur radio for many years has been known for experimenters arriving at novel experimental solutions to overcome problems. Take this one step further and these novel solutions attract research and develop grants and are developed and realised into production. Flex Radio, SteppIR and MMDVM are good examples of this happening. New legislation and training programs see amateur radio qualifications being accepted by professional bodies for membership. Amateur radio is accepted as RF technology thought leaders in the Internet of Things (IoT), Makerspaces, and Hackerspaces. The WIA is actively looking to a broad cross section of vendors/suppliers to provide members with discounts for a broad range of products.

After presenting a possible future for Amateur Radio we then moved back to the present. At the end of 2017 the Board undertook a Core Purpose workshop that was facilitated by the Strategy Advisory Committee. The outcome of the exercise was Core Purpose for the Institute:

- Represent Radio Amateurs to regulators nationally and internationally
- Promote amateur radio to the community
- Promote education, research and discovery in technical disciplines

*Continued on page 4*



## Board comment Continued from page 3

- Bring people together
- Facilitate electronics & communications experimentation
- Train and educate

If you compare these to the current Objects of the WIA, they look very similar. This was good reinforcement and showed the Board that we were heading in the right direction. These can be further distilled down to three core purposes of the WIA:

### **Promotion Education Representation**

To start to build the foundation that underpin these core purposes there have been a range of improvement projects happening over 2017/2018 that include:

- Business Process Management systems to improve key business processes
- Cloud based Infrastructure providing more flexible and scalable ICT infrastructure
- Customer Relationship Management including a ticketing system
- Six volunteer digital project managers to assist the organisation with realising these projects
- Independent Strategy Advisory Committee - the ideas engine of the organisation
- Understanding the organisation with a vision of beyond 2020 – realising a future
- Necessary Change to support stability and fund future development

There are many other things that need to happen and these include testing the core purpose with members and the amateur community. Improving membership engagement. Tendering for and if successful, transitioning to the new contractual arrangements with ACMA. Improve marketing and promotion of the WIA and hobby with assistance from affiliated clubs.

Collective visions of the future for amateur radio in Australia builds the aspiration that creates the vacuum that pulls people into

becoming part of a better future for the hobby.

How will we know things are improving? There will be a developing environment that:

- Creates and supports a broad community of like-minded individuals
- Ensures any regulatory obstructions are, to the extent possible, addressed in the community's favour
- Anyone who wants to become an amateur radio operator, can
- The community it supports will enjoy the ability to learn, research, discover, experiment and socialise

This is provided as food for thought from the Beyond 2020 presentation from the WIA AGM weekend. We encourage your feedback – [support@wia.org.au](mailto:support@wia.org.au)

2018 will see many changes in the WIA. It is an exciting time in the hobby of amateur radio in Australia.

On behalf of the WIA Board  
**Justin VK7TW**



## Editorial Continued from page 2

guidelines on how to contribute, available at:

<http://www.wia.org.au/members/armag/contributing/>

One key factor is good quality images. We need high resolution images for the cover photo each issue: we cannot use a 500 kB jpg image for the cover – we need an image that has reasonable composition, that relates to an article in that issue and is at least 2 MB as a jpg file, with higher resolution preferred. This month's cover again features a portable station, but at the time the decision was made, it was the best of the available images.

Remember that your article

can be a report on an event or a project, through to a complete project description. Our hobby is broad, so if you want to see an article about your particular area of interest, either write something yourself, or talk with your more learned colleagues about preparing an article.

### **Winter is here**

Winter is definitely here in Gippsland! Perhaps you will have more time at the radio or the work bench on those cold wet days. I have been watching the weather and heading out on better days to activate some Parks and thus getting a good dose of radio whilst

enjoying the great outdoors – very therapeutic for the soul.

August is almost here, which means that will soon have the RD Contest, the International Lighthouse Lightship Weekend and the ALARA Contest. On those weekends, the bands will likely be busier than normal. Do consider answering that CQ call, even if you have no plans to formally enter a Contest. If you do make some Contest contacts, then consider submitting your log, as it may be useful to the Contest Manager as a Check Log.

Until next issue,  
Cheers,

**Peter VK3PF**



### **Participate**

## **ALARA Contest** | 27 - 28 August 2018



## WIA responds to ACMA Consultation Paper on Amateur Qualifications Frameworks

In early June the Australian Communications and Media Authority (ACMA) released a consultation document regarding possible variations to the existing qualifications framework for the Amateur Operators Certificate of Proficiency.

The Wireless Institute of Australia is the peak body for Amateur Radio in Australia. There are approximately 14,000 Amateur Radio Licences issued in Australia. The WIA sought feedback from both members and the amateur community prior to producing its response to a document that is clearly contentious. Despite an abridged timeline the WIA received numerous well considered and thoughtful responses all expressing deep concern about the impact that the approaches identified in the ACMA consultation paper would have on amateur radio in Australia.

The President of the WIA, Mr Justin Giles-Clark said today that "the Wireless Institute of Australia has produced a response to the ACMA entitled "Amateur Radio - The future of learning and assessment in Australia" which has been published on the Institute's web site".

"This response articulates why, in the view of the WIA, none of the options proposed by the regulator meet the regulator's requirements and proposes a 4th approach that is believed to provide a better overall outcome to both the amateur community and the regulator" Mr Giles-Clark said.

The response was submitted to the regulator for their consideration on Monday the 2nd of July, 2018 and was distributed to the volunteer community of Nominated

Assessors, Assessors and Learning Facilitators.

Key themes that resonate through all submissions received by the WIA is that our members and the broader amateur community strongly oppose any change to the amateur radio qualification framework that:

- results in a reduction in the social and community outcomes that amateur radio provides to approximately 14,000 Australian amateur operators, their clubs and the communities in which they operate; or
- exposes the hobby to further existential (high supply cost and low demand) risk; or
- Imposes additional barriers to entry for new operators or barriers to advancement for existing operators

For all enquiries regarding the WIA's response please email [support@wia.org.au](mailto:support@wia.org.au)

## Strategy Advisory Committee Update

Dear Member,  
During the Annual General Meeting on the Gold Coast on the 19th of May, 2018 a series of Open Forum reports regarding the performance of various WIA committees were tabled for discussion.

It has come to light that the report presented by the Strategy Advisory Committee (SAC) contains factual errors and misleading statements that relate to the Publications Committee and AR magazine.

The Open Forum Report for 2017/2018 has been withdrawn from the WIA website while an alternate version is submitted and approved by the Board.

This communication seeks to outline the issues with the report:

- Forward Looking Statements:  
The SAC has been discussing

internally a number of possible strategies for improving the performance of AR magazine in terms of its circulation and audience with a view to developing strategies to make AR a financially independent publication that is able to respond to the changing needs of the existing and future amateur radio communities. A number of the statements in the SAC report discuss changes that "may help" improve AR magazine, these statements are forward looking statements that relate to the body of work that is being undertaken to develop future strategies. The strategies being considered by SAC will in time evolve into a discussion paper for consideration by the PubCom and the broader amateur community.

- Editorial Quality: Since inception AR magazine has encouraged contribution from members of the amateur community and AR's success has relied on these articles. The SAC report makes several sweeping statements regarding improvements to editorial quality which, as a result of the way in which these statements are made, materially devalues the tireless effort of the Publications Committee (PubCom) and the contributors of articles to AR magazine.
- AR magazine Revitalisation Project: It can be inferred from the report that there is a broader AR revitalisation project that has received Board assent. This is in error. There is no WIA AR revitalisation project currently approved by the Board for execution - there is, however, as discussed above, internal discussion within SAC.

Continued on page 6



- Financial Performance of AR magazine: The SAC report refers to the costs associated with AR magazine "spiralling out of control". This statement is factually incorrect. The Publications Committee have successfully maintained cost increases associated with the production and distribution of AR magazine to a level below that of CPI. What has transpired over a period of time is the underlying revenue from advertising in AR magazine has reduced resulting in an increase in the level to which members fund the production and distribution of AR magazine.

It should be noted that at this time accountability for advertising revenue rests with the Board and as such PubCom is not accountable for this challenge and should be commended for their success in managing the production costs associated with AR magazine.

- AR magazine - WIA's biggest spend: The SAC report states that AR magazine (which, in itself, consists of a number of smaller expenses) is the WIA biggest spend. Like many

things, understanding what the "biggest spend" really is depends how the situation is perceived. It could be argued that running the office is the biggest expense. (Noting that the office expenses include the necessary expenses associated with supporting the ACMA deed, and essential functions for the operation of the WIA). It is accurate to state that the nett cost of AR magazine and general membership services are the two largest single costs to members and this reflects the importance of these services to the WIA membership.

- Policy on Publication of Contentious Materials: The SAC report infers that the SAC was instrumental in the creation of this policy. This policy was developed in consultation between PubCom and the 2016-2017 Board. The role of SAC in 2017 was to broaden the scope of application of the policy to include all publications, print and/or electronic.

The Strategy Advisory Committee is committed to ensuring that reporting regarding its activities

is both accurate and not open to misinterpretation.

In order to ensure that this is the case SAC will:

- limit its end of year report to governance matters and board accepted proposals.
- Prepare and distribute discussion papers on an (approximately) 6 monthly basis and garner feedback:
- Initially from the WIA team or teams that are impacted by the thought bubbles in the discussion paper; then
- from the membership and the broader amateur community.
- Ensure that feedback from the discussion paper is consolidated and reviewed by key stakeholders and affected parties prior to being presented to the Board as a proposal for adoption.

The Strategy Advisory Committee sincerely apologises to the Publications Committee, its members and contributors for the errors in this report that have disrespected their tireless contribution and have potentially led to misinforming the broader amateur community.



## WIA honours achievers with awards

### WIA Board

At the Wireless Institute of Australia annual general meeting held at SeaWorld Conference Centre, a number of high achievers were honoured with the presentation of its annual awards.

### GA Taylor Medal

**Ewan McLeod VK4ERM** from Kenmore QLD received the GA Taylor medal. The GA Taylor medal was presented in recognition of exceptional service to The Wireless Institute of Australia. The GA Taylor

medal is the highest ranking of all the WIA Merit Awards.

### Chris Jones Award

In other recognition, for his work through promotion and training in Amateur Radio with the Radio and Electronics School, **Ron Bertrand VK2DQ** was awarded the prestigious Chris Jones Award. This award is in memory of Chris Jones VK2ZDD (SK) and is presented to radio amateurs who have made an exceptional contribution to amateur

radio and the Wireless Institute of Australia.

### The WIA Publications Committee Awards

Publications Committee Awards were announced and awarded to:

**Trevor Quick VK5ATQ** and **Stuart Fillmore VK5STU** who received the Al Shawsmith Award for the best non-technical article "VK5 School Holiday Technology Program is a Resounding Success" published in the May 2017 issue.



**Peter Gibson VK3AZL** received the Higginbotham Award for service to the amateur radio community and for Peter's service to the WIA and the Publications Committee over at least 32 years, serving as the lead Technical Editor for most of that period.

**Jim Henderson VK1AT** received the Publications Committee Technical Award for his article "A 35 to 4400 MHz Signal Generator" published in the November 2017 issue.

### Technical Excellence Awards

Three Technical Excellence Awards were announced, these were presented to:

**Peter Parker VK3YE** for his prolific promotion of amateur radio in Australia, and making the hobby accessible to new and old through his YouTube channel and ebooks.

**Timothy Dixon VK5ZT** for his work promoting his hobby, openly sharing his extensive modifications to microwave equipment and furthering experimentation in microwave and optical bands in Australia.

**Glenn English VK1XX** for sharing his technical skills and knowledge to improve the hobby in a variety of technical fields.

### WIA President Commendations

Four WIA President Commendations were awarded these to:

**Joe and Julie Gonzales VK3YSP & VK3FOWL** for promotion of amateur radio in schools, engaging youth and school communities, and sharing their projects and findings with the amateur community.

**Grant Willis VK5GR** for his work with the WIA, contesting and in past advocacy within the IARU.

**Trent Sampson VK4TS** for actively promoting contesting in Australia, engaging with clubs to improve their contesting skills and supporting contesting in Australia and the region.

**Paul Simmonds VK5PAS** for his work with the VK5 Parks Award, promoting WWFF and opening up an aspect of the hobby to the wider community.

### 10 Year Assessor Service Awards

16 WIA Assessors reached the milestone of 10 years of service conducting assessments, and those present were presented a Certificate and pin by the WIA Exam Service to mark the occasion. 10 year service awards were to Daniel Clift VK2DC, Brian Conner VK2ZBP, Mark Plowman VK2MP, Peter Burgess VK2ZZA, Edward Thrift VK2ARA, John Chenoweth VK3ZX, Ashley Clark VK3SSB, Rex Foord VK3ARG, Walter Cornell VK3FGC, Ewen Templeton VK3OW, Arnold Put VK3YAP, Andre Van Zyl VK3AVZ, Peter Schrader VK4EA, Cecil Kenny VK4CF, Stephen Reakes VK4QQ, Patrick Daley VK8ZMX.

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# Some thoughts on implementing a 15 W EIRP limit for 60 m

Ron Cook VK3AFW

The recent 2015 WARC Conference agreed on a world-wide allocation for amateurs on 60 m, but with a restriction of 15 W EIRP. The band is already authorized for amateurs by many jurisdictions but with power levels from the transceiver of up to 100 watts being common.

The ACMA have responded positively and put an allocation in the 60 m band for amateurs in their current spectrum plan however it has the 15 W EIRP restriction as per the WARC agreement (Reference 1).

Of course until an amendment to our Licence Conditions Document is issued and takes effect, we do not have any access to the band.

What does this mean and how could it pragmatically be implemented? Many Australian operators already have a 60 m capability in their home or portable transceiver but do they know what 15 W EIRP entails?

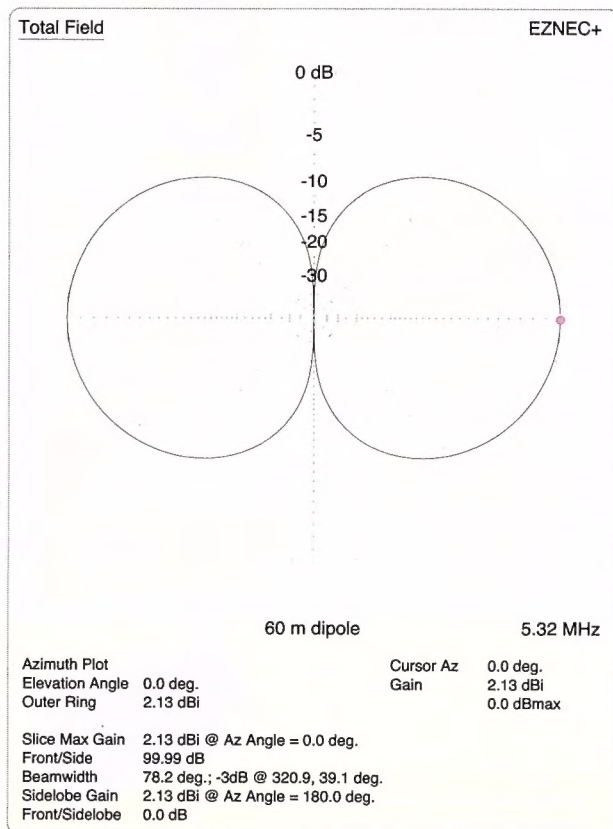


Figure 1: Radiation pattern of a dipole in free space, top view. The horizontal axis represents the wire. Note deep dimples off the ends of the dipole showing low radiation around this axis. This energy is added to the main lobes, hence gain over an isotropic radiator.

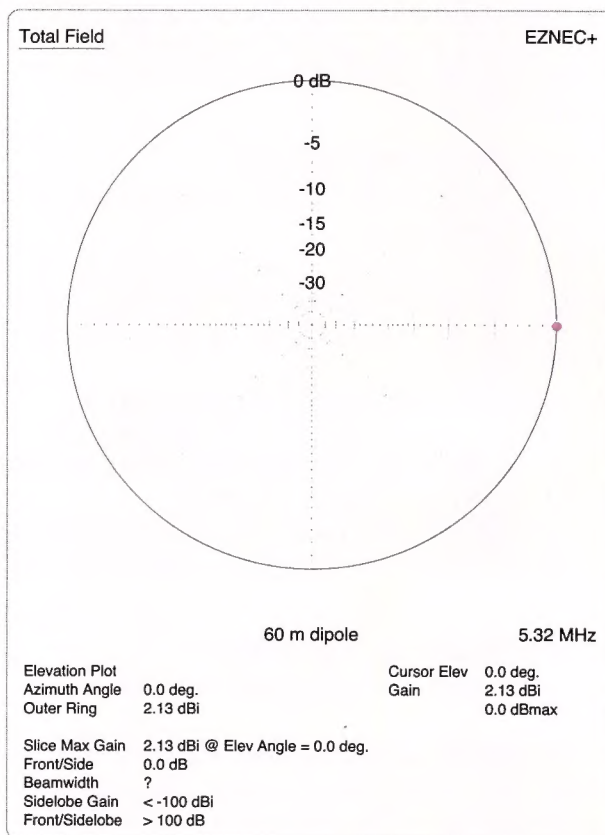


Figure 2: Radiation pattern of a dipole in free space, end-on view. The wire now comes perpendicularly out of the page. Note that the program calculation gives an answer that is 0.01 dB less than theoretical. This difference is within the bounds of errors of computation and may be ignored.

I suspect the answer is no as there is no simple clear cut equitable answer. This article attempts to present an explanation of what 15 W EIRP means and some practical implementations of the EIRP limit, supported by field strength computations.

## EIRP

EIRP means Equivalent Isotropic Radiated Power. That involves

| Power (W) | Relative to 15 W (dB) |
|-----------|-----------------------|
| 1         | -11.76                |
| 2.5       | -7.78                 |
| 5         | -4.77                 |
| 10        | -1.76                 |
| 15        | 0.00                  |
| 20        | 1.25                  |
| 25        | 2.22                  |
| 50        | 5.23                  |
| 100       | 8.24                  |

Table 1: Relationship between 15 W and other commonly used power levels. If the antenna has a gain of -5.23 dB or less then 50 W would be compliant.



a theoretical antenna radiating equally in all directions. This is known as an Isotropic radiator. It is a convenient theoretical construction (Reference 2).

In free space, a dipole, the basic element of any antenna, has zero radiation in line with the conductor, which is off the ends of the wire. The signal that is not radiated off the ends is added to the rest of the radiation and so a dipole has 2.15 dB gain over an isotropic radiator when both are in free space. **Figs 1 and 2** show the radiation pattern of a dipole in free space from orthogonal views and were obtained by using the antenna analysis program EZNEC V 6.0 (Reference 3).

An aside: Antenna manufacturers often quote their antenna gains in terms of dBi, or dB over an isotropic radiator. Gains quoted as dBd, dB over a dipole are 2.15 dB less.

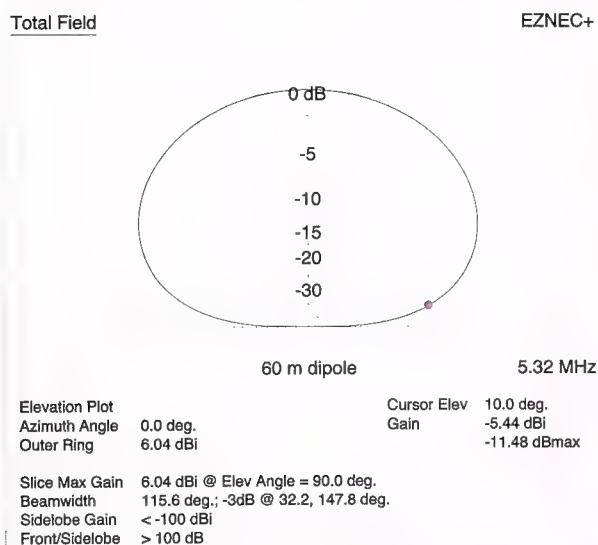
### 15 watts EIRP

As a dipole in free space has a maximum power gain of + 2.15 dBi, to achieve 15 watts EIRP the power to a lossless dipole would be 9.14 watts. 10 watts would be only 0.39 dB above 15 W EIRP.

Table 1 shows the relationship between different power levels and 15 W. This gives a clue as to what gain may be used in relation to each power level to comply with the 15 W EIRP level.

Now what if the dipole is in your back yard and not halfway to the moon? As a consequence of ground reflections it will have a radiation pattern that gives more gain in some directions and consequently some gain reduction in other directions. How do we find out what is happening without a truck full of test gear?

We can use an antenna analysis program to calculate the antenna pattern and gain for a variety of set-ups, from free space to a typical installation or



**Figure 3:** EZNEC Plot of half wave dipole 10 m above average ground. The signal radiated below 10 degrees elevation is less than - 11.7 dBi.



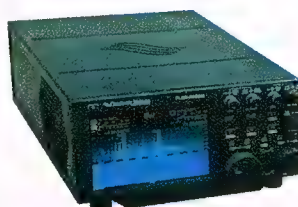
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with a perfectly reflecting ground. I used EZNEC as it is reasonably accurate and easy to use. It is available at no cost. After using the free version for many years, I have upgraded to a paid version to get a few extra features.

I have run a series of simulations for a wide range of possible installations using a dipole. This verifies what one can read in a good antenna book, such as the ARRL Antenna Handbook (Reference 4), EZNEC allowed me to investigate heights and ground types not covered in the handbooks and to quantify the gain in dBi for each simulation.

It is important when modelling horizontal antennas close to the ground that the High Accuracy Ground option is used in EZNEC otherwise errors of 1 to 10 dB in apparent gain will occur (Reference 5). The assumed ground parameters were conductivity of 0.003 S/m and dielectric constant of 13. Changing these values will have some effect on the calculated values. For Australia the value is usually between 0.001 S/m and 0.01 S/m so 0.003 is a reasonable compromise.

A frequency of 5.32 MHz was chosen for the simulations and the wire length adjusted for resonance at 10 m above ground level (agl). In the extreme cases, 3 m agl and free space, checks were made with the wire length re-adjusted to retain resonance at 5.32 MHz, but the difference in gain was minimal for other heights.

We need to look at a maximum gain configuration as well other typical cases. The ground acts as a reflector so when the antenna is brought from free space to say 10 m above ground, reflections from the ground cause the radiation pattern to be a distorted sphere with the maximum gain straight up and nothing along the horizontal plane. This is shown in **Figure 3**.

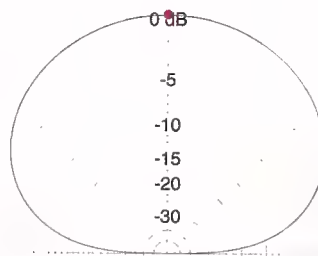
The maximum gain occurs with the dipole as a horizontal wire over a perfect ground, a very, very large copper sheet on the ground. The maximum gain is 9.0 dBi straight up with the antenna just under 3 m above the perfect ground or 8.8 dBi when it is at 30 m above a perfect ground. It does not drop below 6 dBi at any height in between. At greater heights the pattern breaks into two lobes then many lobes as the height increases but none have a gain in excess of 9 dBi. Eventually as the height is increased the pattern returns to the free space shape. **Figure 6** shows the variation in maximum gain vs antenna height.

Heights less than 3 m are considered unacceptable in terms of compliance with the Electromagnetic Radiation (EMR) ARPANSA Standard, so were not modelled. See later comment on exclusion distances. Heights of greater than 30 m are verging on the impossible.

When the antenna gets closer to the ground the ground loss increases and thus reduces the effective gain of the antenna. The gain varies from only 1.1 dBi at 3 m height to 8.1 dBi at 60 m height, which is about 7 dB worse at 3 m compared to a perfect ground to just under 1 dB worse at heights above 20 m. This is shown in **Figure 7**.

Total Field

EZNEC+



60 m dipole

5.32 MHz

|                |                                     |             |           |
|----------------|-------------------------------------|-------------|-----------|
| Elevation Plot | 0.0 deg.                            | Cursor Elev | 90.0 deg. |
| Azimuth Angle  | 0.53 dBi                            | Gain        | 0.53 dBi  |
| Outer Ring     |                                     |             | 0.0 dBmax |
| Slice Max Gain | 0.53 dBi @ Elev Angle = 90.0 deg.   |             |           |
| Beamwidth      | 100.2 deg.; -3dB @ 39.9, 140.1 deg. |             |           |
| Sidelobe Gain  | < -100 dBi                          |             |           |
| Front/Sidelobe | > 100 dB                            |             |           |

**Figure 4:** EZNEC Plot of half wave dipole 3 m above average ground. The signal is more concentrated toward the vertical and ground losses have consumed most of the input power. The signal at less than 57 degrees elevation is less than 0 dBi. Note the significant drop in radiated signal due to ground losses.

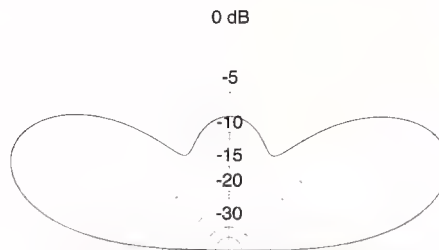
A detailed radiation plot for a dipole at a 3 m height over average ground is shown in **Figure 4**.

As with a perfect ground, the pattern of radiation varies considerably with height, especially as the height passes a half wave and multiples thereof. An example for a 30 m height is shown in **Fig 5**.

The maximum gain possible is 9 dBi but this requires ideal conditions.

Total Field

EZNEC+



60 m dipole

5.32 MHz

|                |                                   |             |           |
|----------------|-----------------------------------|-------------|-----------|
| Elevation Plot | 0.0 deg.                          | Cursor Elev | 26.0 deg. |
| Azimuth Angle  | 7.8 dBi                           | Gain        | 7.8 dBi   |
| Outer Ring     |                                   |             | 0.0 dBmax |
| Slice Max Gain | 7.8 dBi @ Elev Angle = 26.0 deg.  |             |           |
| Beamwidth      | 30.1 deg.; -3dB @ 12.4, 42.5 deg. |             |           |
| Sidelobe Gain  | 7.8 dBi @ Elev Angle = 154.0 deg. |             |           |
| Front/Sidelobe | 0.0 dB                            |             |           |

**Figure 5:** EZNEC plot of dipole over average ground at 30 m height. Note that three lobes have developed with a maximum gain of 8 dBi at 26 degrees elevation.



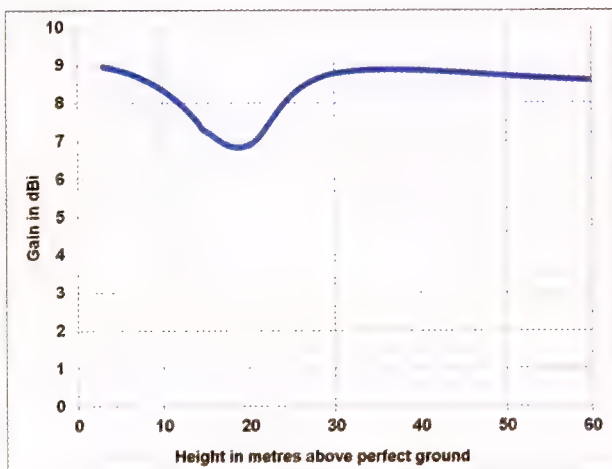


Figure 6: Graph of dipole gain compared to an isotropic radiator for different heights above a perfect ground. The graph plots the maximum gain without regard to the elevation angle. The maximum gain occurs with the main lobe pointing up for heights below 15 m. At greater heights the lobe starts to develop into two lobes and then more complex patterns as the height increases.

## The Ionosphere

9 dBi gain translates to a mere 1.9 W to give 15 W EIRP, much of which may not be reflected by the ionosphere and will continue into deep space if we are using a low dipole. If the Critical Frequency reaches 5.3 MHz, then the entire signal will be reflected, giving good local coverage. When the Critical Frequency is less than 5.3 MHz then an incidence of less than 90 degrees will allow contacts to be made, but there will be a dead skip zone. (The Maximum Usable Frequency is always greater than the Critical Frequency and is dependent on the angle of incidence of the signal to the ionosphere.)

Clearly the state of the ionosphere has a bearing on what angle of incidence should be considered. A maximum incidence angle could be declared or, as with the calculations here, a Critical Frequency in excess of 5.3 MHz has been assumed and therefore all radiated angles are pertinent.

None of us are going to be able to achieve ideal set-ups so the performance in a more realistic environment is required. If it is accepted that for a practical dipole set-up a maximum gain of 8 dBi might be achieved, then this translates to 2.4 watts yielding 15 W EIRP. It could very reasonably be argued that allowing for some small losses (0.2 dB) a figure of 2.5 watts would be compliant with 15 W EIRP when using a horizontal dipole at any height above 3 m when in an average ground situation without buildings or trees nearby.

## Other antennas

An inverted vee dipole was simulated. The apex was set to 10 m and the ends to 5 m. The maximum gain was 5.24 dBi or about 1 dB less than for a dipole at 10 m.

Verticals need to be considered as although not

good for Near Vertical Incidence (NVI) operation they are good for DX. Australia is a long way from its neighbours but the compliance of a vertical must be considered as we will be the secondary service in the band.

A quarter wave vertical over perfect ground gave a maximum of 5.16 dBi. The gain is much less at 0.18 dBi over a typical ground so for compliance 14.4 W, could be run.

A 5 m high centre loaded vertical was also investigated. I started from Reference 5 and then imported the calculated values into EZNEC. Using achievable values (Coil Q 100, ground stake loss 5 ohms) the antenna was found to have a gain of - 5.29 dBi which would allow the use of 50 watts and still be compliant with 15 W EIRP. See **Figure 8**.

Base loading is less efficient but was not simulated.

A quarter wave sloper at 45 degrees to a "40 ft (12.2 m) tower" gave a maximum gain of 6.41 dBi over a perfect ground and 5.35 dBi over average ground. The angle of the sloper and the size of the tower may vary and give higher gains, but it is expected that they will not exceed 8 dBi over average ground. Strictly speaking it isn't a zero gain antenna but was included as it may be used by some operators.

Loaded antennas will be similar to the full size versions but will have higher losses, that is, less gain as illustrated in **Figure 8**. They need to be evaluated on a case by case base.

## How should the ACMA interpret 15 W EIRP?

This isn't a simple matter like the 400 W PEP maximum power output for appropriately licenced amateurs. There are various options that I think make sense. They are my

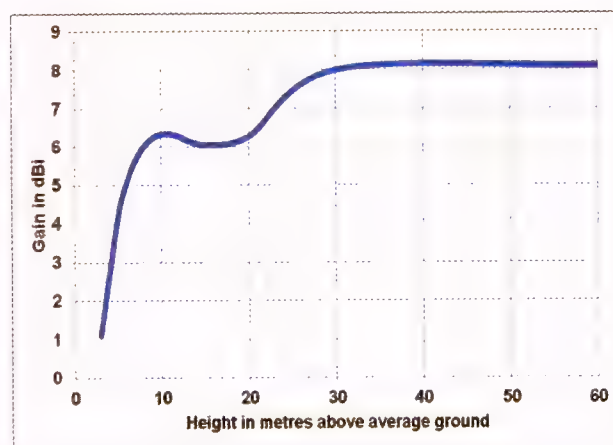


Figure 7: Graph of dipole gain compared to an isotropic radiator for different heights above an average ground. The graph plots the maximum gain without regard to the elevation angle. The maximum gain occurs with the main lobe pointing up for heights below 15 m. At greater heights the lobe starts to develop into two lobes and then more complex patterns as the height increases. Ground losses also reduce the overall gain especially as the antenna gets below 8 m.



own opinion and have not been endorsed by the WIA Board or other amateur radio organization and I certainly have not put these to the ACMA. They are presented as possibilities for discussion.

Most amateurs would prefer an output power based requirement because of its simplicity. To meet the intent of the 15 W EIRP the type of antenna used is critical and the ACMA may make recommendations on this. Compliance is always better when the requirements are seen as clear, reasonable and not difficult to achieve.

### Option 1

The ACMA could just make the regulation as 15 W EIRP without comment and leave it to the individual amateur to calculate how much power he could run. This removes the onus on the ACMA to make a technical decision, but checking compliance becomes complex and the degree of compliance will be variable. While a significant percentage of amateurs have the software and hardware to determine compliance for any system they may erect, not all amateurs are able to do so therefore an option with some detailed guidelines is preferred by the author.

### Option 2

A power level of 50 W to a vertical antenna not higher than 5 m has been shown to be compliant in practical circumstances. The ACMA could give this as an example of compliance. For dipoles no higher than 10 m there is some justification for using the same 50 W power, based on the radiation pattern and low probability of international interference. This could be given as a second complying installation. All other configurations and power levels would have to be justified by the operator as being equivalent to the above and be able to supply supporting evidence of compliance.

### Option 3

At least one jurisdiction has declared 10 W to a dipole, or other antenna with no more than 0 dBd gain, satisfies the requirement. This is an approximation to 15 W EIRP in free space, the error being 0.39 dB for a lossless system. This gives a precedence that the ACMA could follow. It is a power level that amateurs can set their equipment to easily, and is unlikely to cause any interference to adjacent channel users.

However it ignores the inefficiency and radiation patterns of antennas likely to be used. Amateurs would need the option of showing that their set up was equivalent.

### Option 4

If the ACMA were to deem that meeting the 15 W EIRP limit in every conceivable circumstance was required, then a power level of 2.4 W to a dipole or other antenna with no more than 0 dBd gain satisfies the requirement in all situations I can imagine. Rounding this to 2.5 W to allow for some small losses would be expedient as this is a standard power level for many amateur

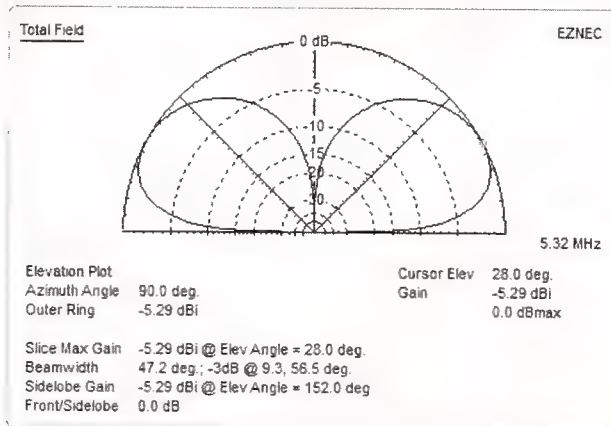


Figure 8. Vertical pattern for a centre loaded vertical 5 m high. Average ground, (0.05 S/m, Er 13) coil Q 100 and ground connection loss of 5 ohms were assumed. Note that this antenna has sufficient loss for 50 W input to be compliant.

transceivers. The difference, about 4%, is within the likely measurement uncertainty.

Many base transceivers cannot be easily set below 10 W so the ability to comply is compromised in this case. Antennas are unlikely to achieve the highest possible calculated gains in practical cases so this option seems over restrictive.

### Please Note

Any statement by the ACMA or the WIA as to what is acceptable does not remove the onus from the operator to check that their own system is compliant.

### Safety

Any antenna wire that is within reach is not compliant with the electromagnetic energy (EME) emissions ARPANSA Standard. For 60 m, using Reference 6 and doing a linear interpolation for 5.3 MHz, the exclusion zone distance for 50 W to a dipole is 0.68 m and 0.61 m for a vertical for compressed SSB. The operator is responsible for ensuring that this is met. I have used the calculator implemented by Doug VK3UM (SK) (Reference 7) but explaining the various methods by which compliance is achievable requires another article. Physical prevention by antenna location is one method, hence the suggested 3 m minimum height. Warning notices and temporary roping off of the area around a vertical would also be a way of complying for a portable station.

### Conclusion

15 W EIRP has been defined. An analysis of basic antennas and their radiation patterns in practical situations has been carried out and a summary presented here. The gains in dBi have been extracted and presented. I have suggested that the ACMA has several options in dealing with the 15 W EIRP limit. These have been briefly described. Option 2 is my first



preference but failing that Option 3 would be my next best position. Option 4 looks bullet proof but consequently is very restrictive.

This article should provide some guidance regardless of what eventuates.

## General Notes

1. In this article all power levels are taken to be PEP or constant carrier.
2. The calculations have ignored the effect of buildings, trees and other structures in the vicinity of the antenna. These will likely degrade the gain by absorption rather than enhance it but there may be exceptions. If your antenna is near conducting structures more than about 6 m high, then these need to be included in a simulation to estimate their effect.
3. Ground conductivity and relative permittivity will be a bit different to the average for any particular site so using the two extremes, conducting ground and free

space for maxima is justified with the average values illustrating what may be expected in real installations. The author is of the opinion that the maximum gain from any real antenna installation will be at least 1 dB less than the perfectly conducting ground maximum of 9 dBi. Ground losses are the major factor affecting the radiated signal for verticals and low dipoles.

4. Antenna efficiencies and radiation patterns have a major bearing on potential compliance and also potential interference with primary uses. It is beyond the scope of an article like this to cover all possibilities.

## References

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No 412172, FCC Office of Engineering, Laboratory Division, Draft Publication, October 2010.

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## Acknowledgement

Thanks to Peter VK3MV and Dale VK1DSH for drawing my attention to some of the references and for suggestions on content.

*Ed: Several images were generated by the Editor using EZNEC 6+ for better reproduction, so may show numbers which differ slightly to those quoted by the author.*

*NB: The 60 m band is not yet available to VK amateurs.*

## AMSAT-VK



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### About AMSAT-VK

AMSAT-VK is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial amateur radio satellites. Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft. AMSAT-VK is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

### AMSAT-VK monthly net

#### Australian National Satellite net

The Australian National Satellite Net is held on the second Tuesday of the month (except January) at 8.30 pm eastern, that's either 9.30 or 10.30Z depending on daylight saving. Please note we will be taking check-ins from 8.20pm-ish. Check-in starts 10 minutes prior to the start time. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. Operators may join the net via EchoLink by connecting to either

the "AMSAT" or "VK3JED" conferences. Past experience has shown that the VK3JED server offers clearer audio. The net is also available via IRLP reflector numbers 9558. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

**In New South Wales**  
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**In Queensland**  
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**In South Australia**  
VK5TRM, Loxton on 147.175 MHz  
VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278,  
EchoLink node 399996

**In Tasmania**  
VK7RTV 2 m. Repeater Stowport 146.775 MHz. IRLP 6616

**In the Northern Territory**  
VK8MA, Katherine on 146.750, CTCSS 91.5, IRLP Node 6800

We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

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Should you wish to join AMSAT-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.



# Field Strength Meter Review

Taro Deneve VK3TFD

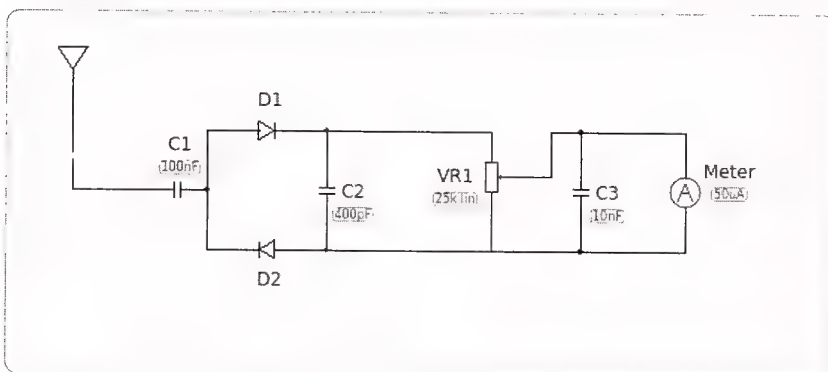


Figure 1: The Field strength meter circuit.

Thinking about using surface mount components but unsure how to start? Do you want to experience the benefits of using surface mount components? Want to build a useful piece of test equipment?

## Circuit

This article describes the construction of a simple RF field strength meter using the BAT6203W, a surface mount RF detector diode. This diode is readily available in Australia through RS Components, part number 445-1878, for around \$1.75 for a pack of 5. The capacitors are also surface mount 0805 sized 50 V from a resistor and capacitor sample book. The meter is a 50  $\mu$ A meter. The antenna was made from a length of 2.5 mm galvanised wire soldered onto an M5 bolt.

The circuit is reproduced with permission from Peter Parker VK3YE.

## Construction

A drawing of the PCB is illustrated in Figure 2. The dimensions are not at all critical, except that the meter mounting holes must match the meter you are using. The drawing shows two capacitors for C2. This is because I didn't have a single 400 pF capacitor, so I used two 200 pF

capacitors in parallel. Check your panel meter to ensure that the meter deflects the correct way when the board is installed.

This will save you later from having to either connect the board upside down or change the diode orientations after you install them. Cut the board to the required dimensions and drill the holes as required. Mark the location of the

components and breaks on the copper. There are several ways to create the breaks in the copper. I used a hacksaw blade, but a Stanley knife or Dremel® with fine grinding wheel could be used. Just make sure the gap isn't wider than the components! Place a dab of solder on one side of each of the surface mount components. Hold the surface mount component with the tweezers, ensuring that both ends are touching the board and solder the end that has the solder dab.

Then solder the other side. Check for solder bridges, and copper swarf bridging the PCB, especially on the edges. Test with a multimeter. Screw the board onto the panel meter, mount the panel meter in an enclosure, and make an antenna to collect the signal.

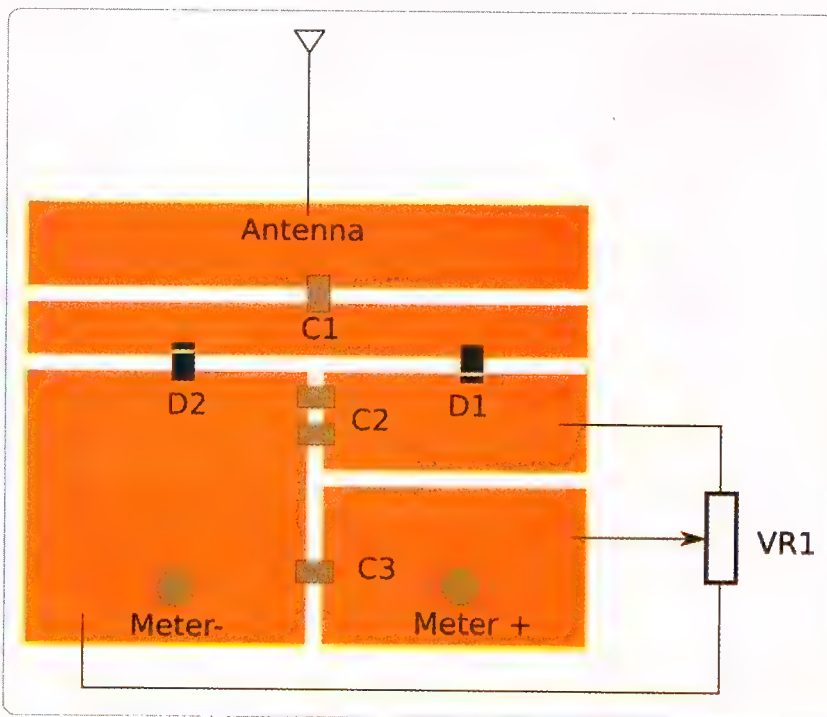


Figure 2: Circuit Board and external connections.





Figure 3: Capacitor soldered on one side.



Figure 4: Capacitor soldered on both sides.

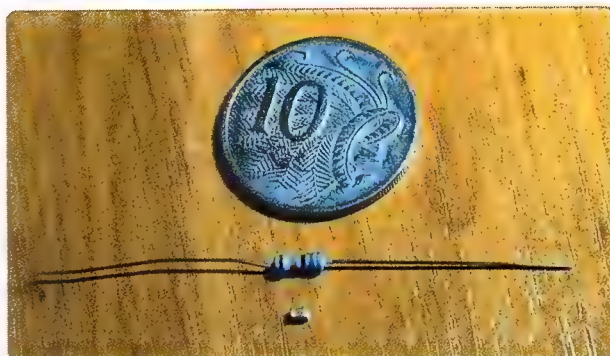


Figure 5: Comparison of leaded resistor and 0805 surface mount capacitor.



Figure 6: Tweezers and 0805 SMD capacitor.

## Usage and Performance

The signal meter is useful for making quick, relative measurements of antennas and transmitters. Use maximum sensitivity as the default position, and reduce sensitivity as required. Note that the meter reading is not linear, particularly on currents below  $20\ \mu\text{A}$ . See the diode graph in Figure 7.

With a 230 mm antenna, at maximum sensitivity, I was able to detect the following:

- 5 W handheld 2 m transmitter at full scale at 2 m distance.
- 10 W into a 7 MHz quarter wave vertical half scale at 5 m distance.
- 2400 W microwave oven, half scale at 10 cm away from door.
- Wireless router:  $10\ \mu\text{A}$  marking 2 cm away.

The orientation of the antenna plays a significant role in the signal displayed.

## SMD soldering

Surface mount components offer numerous advantages to through hole components.

They are nearly always smaller, cheaper, more readily available and offer lower parasitic inductance and capacitance. Many integrated circuits are only available in surface mount packages in Australia. Producing PCBs at home is considerably simplified by not having

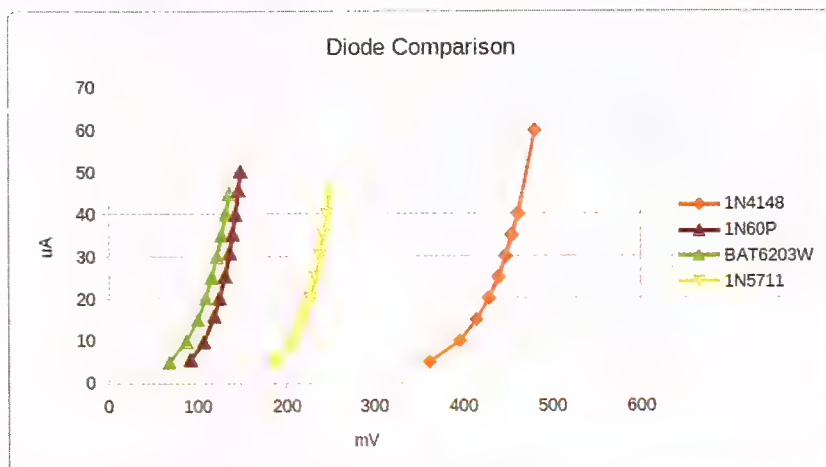


Figure 7: Various diode IV curves from around 5-50  $\mu\text{A}$ .



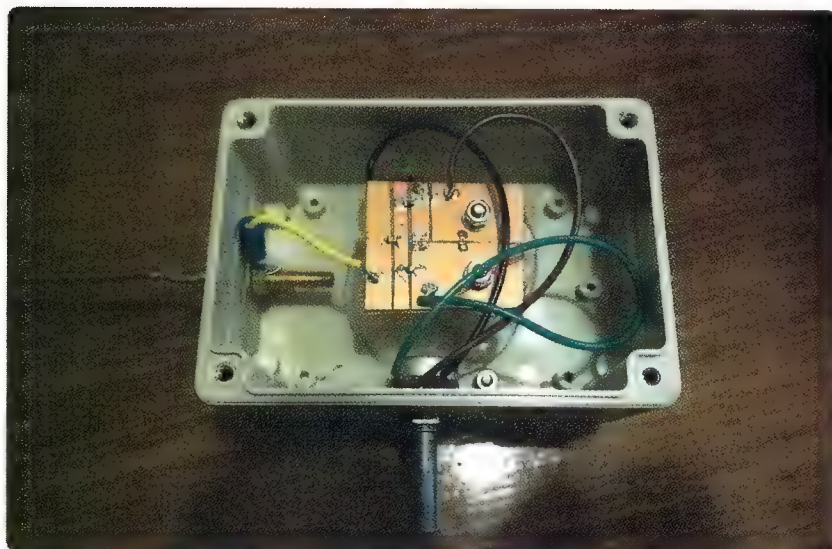


Figure 8: Internal view.

to drill holes for the surface mount components.

Surface mount components are not without their challenges however. The following items are essential for success with working on surface mount components.

- Temperature controlled soldering iron
- Suitable tweezers
- Good lighting
- Magnification

Generally though, if you are capable of soldering a through-hole IC, you will be able to work with the larger surface mount components.

### Diode Substitution

The RF detector diodes should not be substituted for silicon diodes such as the 1N4148.

Even the use of a standard Schottky diode such as the 1N5711 will reduce the performance of the circuit. I made some measurements to re-create the I-V curves of these diodes as shown in Figure 7.

As you can see, the BAT6203W shows far better performance than standard silicon and Schottky diodes at the lower signal strengths. I also tested a germanium 1N60P diode which performed almost as



Figure 9: The completed meter.

well as the BAT6203W diodes.

### The finished meter

Front and internal views of the completed meter are in Figures 8 and 9.



## 2018 SARCFEST

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- ATM at nearby Goonellabah shops
- Go to [www.sarc.org.au](http://www.sarc.org.au) for updates and info for carboot sales
- Inquiries to [vk2src@gmail.com](mailto:vk2src@gmail.com)



# In the footsteps of warriors

The Australian Military Radio Operators AMRO weekend, April 28/29 2018

Mike Charteris VK4XQM/VK4QS

There's something very special about collecting, restoring and operating ex-military radio equipment that I just can't put my finger on. It's a magical combination of nostalgia, imagination and the joy of seeing these once "Warriors of the Ether" come back to life on the amateur radio bands. Not to mention the uniquely personal association they have with every Sailor, Soldier and Airman who ever operated them in times of conflict throughout history. Glimpses of such history at sea, on land and in the sky can be seen in books and on the internet to highlight the truth of the vital communications they provided to save lives and win battles. Best of all is the opportunity provided by the AMRO operators for "You" to work such gear on air.

The Australian Military Radio Operators "AMRO" came together as a loosely formed group by way of a series of emails across the month leading up to ANZAC Day 2018. Our purpose for the weekend was to operate our ex-military radio equipment for what could only be described as a "Military Radio Museum on the Air". We sought to follow on from the very successful "AM & CW on ANZAC Day" commemoration on 25 April established by Mike Patterson VK4MIK, from North Queensland. The AMRO group wishes to increase the awareness of the vast array of military radio equipment used by our defence forces throughout history. More importantly we seek to encourage



Photo 1: The station set up by Alex VK2PRC.

other Amateurs to experience the joy of collecting, restoring and operating ex-military radio equipment on air. This also includes using ex-military Morse keys with your equipment. I use a pre-WW2 Japanese Naval SPARK Key as well as a WW2 German Navy Junkers key. And you just have to wonder about the critical messages sent on such keys in a time of conflict that probably saved hundreds if not thousands of lives.

This year, for the inaugural 2018 AMRO, it was decided to dedicate the weekend of operations to the memory of the brave and resourceful Coastwatchers of World War II. The experiences of these men and ladies (Ruby Boye) read like a Boy's Own adventure

book you would be hard pressed to invent. Their modes of transmission in those dark days of WW2 were Amplitude Modulation and Continuous Wave with output power in the order of QRP. Yet despite using low power, the valuable information they provided on enemy shipping, aircraft and troop movements did get through to Australia. At great risk to their lives through these actions, the information was ably utilized to save the lives of thousands of allied service people. The Coastwatchers determined efforts and sometimes ultimate sacrifice altered the course of World War Two in the Pacific Theatre to defeat the Empire of Japan. Admiral Bill "Bull" Halsey US Navy stated that, "The Coastwatchers saved Guadalcanal and Guadalcanal saved the

South Pacific". The short account of the heroic exploits of the Australian Coastwatchers would not be complete without further mention of their achievements in saving people who would otherwise have been at grave risk of harsh imprisonment or execution by the Japanese. In addition to their vital intelligence gathering function, the Coastwatchers rescued 75 prisoners of war, 321 downed Allied airman, 280 sailors, 190 missionaries and civilians and hundreds of native people who had risked their lives for the Allies.

Let me introduce just a few of the operators of this group as follows. From VK4, Mike Patterson ex-RAN VK4MIK, who in the true spirit of





Photo 2: The Collins station of Jim VK2QA.

the event uses a WW2 ATR-4. This transmitter was also used by the Coastwatchers. In a first-hand encounter many years ago, Mike had the honour of meeting with the former WW2 Coastwatcher, Mr Lionel Veale, author of "Wewak Mission".

Another long-time collector and restorer of military radio equipment is Dave Prince, ex-Fireman VK4KDP of Ipswich. Dave is well known for his collection, his knowledge and website on the subject. Not to mention his displays of military radio equipment at various hamfests and other gatherings over the past couple of decades. Dave's displays allowed many of us to see such equipment as well as the opportunity for donation to Dave's cause.

Also from VK4, former WIA Vice President & former Royal Australian Electrical and Mechanical Engineers Army Major and George Taylor medal recipient, Ewan McLeod VK4TA. Ewan's amazing knowledge of radio covers both military and civilian fields.

Then there is Glenn VK4BG Radio Technician, with his very impressive Harris RF-130/ R2368 ex-Royal Australian Navy Station

that has to be heard to be believed.

And finally myself, VK4QS ex-RAN, with a ubiquitous Collins KWM2 as used by the US Military and the affiliated MARS Stations. I managed to fire up on 20 m, 40 m and 80 m for about 20 contacts across Australia, and one into South Korea. Of note I worked *AR* magazine Editor, Peter Freeman VK3PF, who was out in the wilderness activating a Park, as well as Trevor VK5ATQ, President of the VK-QRP Club. Not forgetting Matt VK4NAI, operating a WW2 TX and a BC348 RX and Ian VK5IS with a RT320 Clansman.

Many will already know WIA Director Brian Clarke VK2GCE, who is also avid military radio collector. Brian fired up his impressive GRC-106 transceiver with 400 Watts PEP despite a few initial problems to work a few across the weekend.

One gentleman who uses British military radio equipment that was

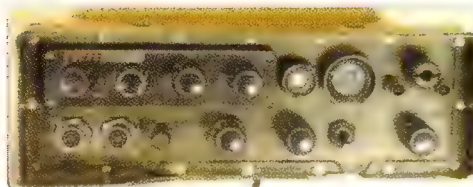


Photo 3: RACAL SYNCAL TRA-921 man pack radio used by Nic VK7BEE.

used during the Falklands War is Alex Ball VK2PRC and operating the Clansman PRC320 Man pack with great success across the continent and beyond. From a suburban park in Campbelltown, Alex setup his Clansman with a 70 Watt amplifier into an end fed 1/2 wave end-fed vertical. Alex had perhaps the most impressive Log for the weekend despite poor HF conditions. Alex managed to work many stations across Australia, New Zealand, the Pacific and continental USA, as well as a contact into both Romania and the United Kingdom. Well done Alex for really flying the flag for our special AMRO event.

And finally, Phil Collins VK2FGBR an ex-Royal Navy Submariner Telegrapher who knocks out CW like the best of them. Phil enjoys operating both AM & CW on his WW2 Collins TCS-7 Transmitter & Receiver. They are actually the same type of sets as used by the Royal Navy Submarine service post WW2, when Phil served Subs in the 1960s.

Another station with a great signal who participated with a very impressive range of Collins equipment was Jim VK2QA from inner Sydney.

In VK5 our representatives are as follows: Andrew Tostevin VK5WT, (Wireless Telegraphy), a restorer and operator of an impressive range of World War Two radios. These include sets such as the 122 set MKII HP, the FS-6, the 112 set and the AT5//AR8. Andrew was kind enough to build a dedicated webpage for our AMRO Weekend to spread the good work to all. He was ably assisted by John VK5FJAA.

Another VK5 restorer of WW2 equipment is Phil Flaherty VK5NPP operating a LARKSPUR C11, who worked Andrew and Nic VK7BEE over the Weekend. Not to mention Dave "Doc" Wescombe-Down VK5BUG, ex-Chief Radio Supervisor RAN and author of the book "MF DOWN UNDER" who operated across the weekend in support of AMRO to work as many as he could.



Our sole Representative from the West was Mark Farrell VK6OP, an electronics technician, who also uses the Clansman PRC 320 with a great deal of success.

And finally a great deal of thanks must also go to Nic Chantler VK7BEE, former Major, Australian Army Signals and later the Intelligence Branch, for his drive, enthusiasm, and extensive military radio equipment and knowledge. Nic managed to work some 67 stations across the weekend using his ex-RAAF RACAL SYNCAL TRA-921. One of Nic's best contacts was with Peter VK7KPC/P, located at a Scout camp with Scouts, operating a Clansman PRC-320 Station on USB.

### Extra notes from VK7BEE

For those of you seeking a bit of homebrew inspiration during a time of war, look no further than the creativity of Archie Caswell, who was licensed pre WW2 as VK4CB. Archie later joined the RAAF to serve overseas and was captured in Java when it fell to the Japanese. As a POW, one of the first jobs was to scrounge parts and build a radio, at the risk

of execution if ever it was found. Archie's story can be found on the internet and is a truly an inspirational read and well recommended.

Another amazing story of Home Brew wartime radio ingenuity is that of the famous "Winnie the War Winner" as constructed by the men of "Sparrow Force" in East Timor during 1942 to re-establish communications with Australia. A good homebrew option these days is the building of a famous WW2 PARASET with CW operation on the 80 m and 40 m bands. Once again the details can be found on the internet as well as operational examples having been filmed on YouTube.

For next year's AMRO event, we will also invite those radio amateurs who have turned their skills to the almost lost art of "homebrew" equipment. If indeed you are one of these artisans, then please consider this over the next 12 months as you will be made feel most welcome. Thus in the time honoured traditions of Amateur Radio your station will be considered "Clandestine" for the AMRO event. You may on the other

hand own a military communications receiver and wish to be part of the AMRO group weekend also. Well, during WW2 in England, many Radio Amateurs were asked by the Government to undertake "Receiving Duties" under the heading of "VIs" or Volunteer Interceptors. The Military also had what was called the "Y" Service, short for Wireless Intercept Service. If you would like to participate under this valuable heading then your task will be to log as many AMRO stations across the weekend as part of the AMRO group. Both these concepts, as well as many amazing radio inventions, saw the skills of radio amateurs turned the tide in favour of an allied victory in 1945.

Finally I would like to thank all Amateurs who took the time to operate during the AMRO weekend using ex-military equipment. Thank you also to those who worked us as part of this inaugural ex-military radio museum on the air event. We look forward to meeting you on air again for the 2019 AMRO weekend. In the meantime, catch up on the history of the Coastwatchers and the men and women of the S.O.E in WW2.

Best 73 for now

Cheers

Mike VK4QS, VK4XQM





# Major Tom\* and Ground Control at a Melbourne Primary School

John Costa VK3JCA and Archie Toy VK3FTOY

## The event – Space age Amateur Radio at Templestowe Valley Primary School

This story is primarily about an extraordinary amateur radio QSO on 19 March this year; between enthusiastic students at Templestowe Valley Primary School (TVPS) in Melbourne and guitar playing (when back on earth) KG5NZA. Otherwise known as astronaut Scott Tingle KG5NZA chatted enthusiastically from space, answering questions from ten thoughtful and enthusiastic young students before a large audience of 500 parents, friends and VIP guests at the school, live from his rig aboard the International Space Station (ISS). Thanks to exceptional collaboration and technology between the Australian amateur radio community and NASA via the Amateur Radio International Space Station (ARISS) project, an exciting RS 59 QSO took place with high precision during the Space Station's ten minute space orbit across the Australian sky. The event was triggered by the school's one and only amateur radio operator, 9 year old student at the time (now eleven year old) Archie Toy VK3FTOY.

Having been planned with the school for nearly a year the event climaxed a year's cooperation between the Australian Amateur Radio fraternity, WIA and NASA via ARISS. By special arrangement and much planning and coordination these special contacts are facilitated from time to time at selected schools around the world. The ARISS program was established to support



Photo 1: The audience overflow area two hours before International Space Station connection.

and encourage learning, future studies and careers for students through the schools Science, Technology, Engineering and Maths (STEM) initiatives via Amateur Radio. TVPS is highly active in a local network of Primary School STEM [1] initiatives, and leading up to this

event apart from other usual studies devoted all of first term to a special project which creatively and enjoyably engaged students in interactively exploring, researching and presenting projects on Space issues. This ARISS event became an outstanding climax to that deliberate project initiative.



Photo 2: Eager audience one hour ahead of the TVPS/ISS connection.

[1] At the recent Intel International Science and Engineering Fair in Pittsburg Pennsylvania, Australian students won first and third prize respectively in the world's largest STEM competition, with a winning prize of US\$75,000.





*Photo 3: 'Ground Control' coordinator and MC Robert Broomhead establishing initial radio contact with the International Space Station.*

## Background

Behind any good story is very often another good story, so this one begins briefly with a much earlier but closely associated set of events. Together they highlight yet again the ongoing supportive spirit and culture of Amateur Radio, the opportunities it offers and the great outcomes it can achieve.

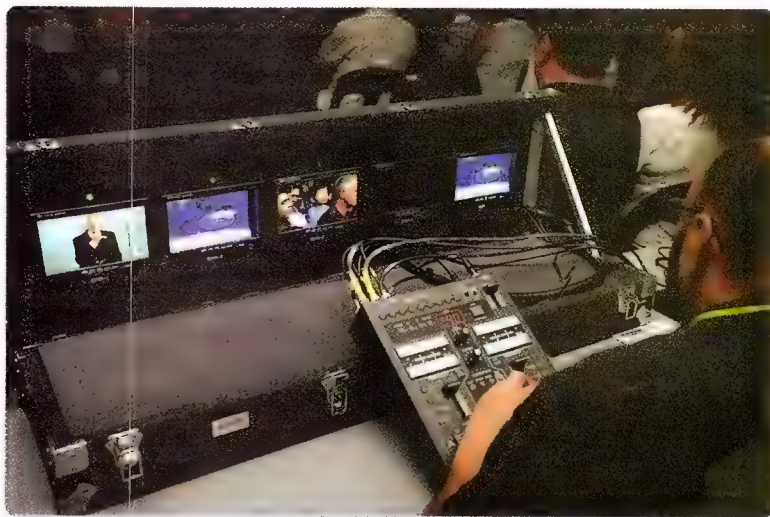
Ballarat in the late 1940s was a quiet place, but at the time not so for a young John (now VK3JCA), whose early lone passion for radio led him at Primary School age to explore a nearby radio shop, Kerr and Lewis, where his request for scrap radio parts was generously and regularly obliged. He soon learned that co-owner John Lewis happened to be an internationally known 'amateur radio' operator (VK3HW) and it wasn't long before young John was invited to visit the latter's exceptional radio 'shack' high on a Ballarat hilltop. With VK3HW's radio expertise and business background this was no ordinary shack but amateur radio nirvana. A huge and well stacked ex-commercial radio tower adjoined his equally impressive and exceptionally well fitted facility on the Nerrina hilltop where he lived at the outskirts of Ballarat. The steep bicycle ride to the hilltop was extremely challenging even for lowest gear; however, this and subsequent bike rides to radio nirvana were handsomely rewarded by what happened there. Firstly

there was a huge world map behind an elaborate console which highlighted the location of currently active QSOs, then aerial switching, return loss testing, impressive home brew linear with (for young John) elaborate manual tuning process, a Collins receiver and much other equipment

that young John couldn't fully understand at the time but already envied. Better still, all of this was followed by numerous exhilarating HF contacts, on the 80, 40 and 20 metre bands. In particular it was thrilling beyond dreams for young John being able to talk clearly with diverse and enthusiastic random amateur radio operators in various parts of the world. Most memorable were QSOs with an English geologist prospecting for oil in Iran using a transmitter on the back of his donkey, with the captain of a nuclear submarine at the North Pole and with a boat owner on the Murray. VK3HW and other radio people in Ballarat at the time were all patient and supportive of an eager young

person who subscribed for 2 shillings and sixpence per month to Radio and Hobbies (later Radio TV & Hobbies) magazine. Benefiting from amateur radio stimulation and support, all this eventually lead to young John's thoroughly enjoyable Communication Engineering career.

Some years after gaining his amateur radio license an older young John achieved his dream of a (Nally) radio tower and stacked beams at his home. Ironically, not on a hilltop, but at 'Lower' Templestowe in Melbourne. He imagined that some young local kid in turn would soon knock on his door wanting to know what the tower and antennas were all about. Thirty six years passed but despite a Primary School around the corner, no one came. No one showed any interest. That was until two years ago when Archie knocked on the door. His questions about the tower and antennas were thoughtful and highly enthusiastic. They resulted in an offer of one hour after-school a week tutoring towards a Novice licence being readily accepted. With persistence and diligent completion of amateur radio 'homework' each week Archie made exceptional progress. After that at an EMDRC Foundation licence weekend, Archie now VK3FTOY, having been well prepared flew through the



*Photo 4: Master Control for TV cameras recording the event and relaying images and sound to the large overflow audience outside.*





*Photo 5: Confidently asking Scott Tingle a well-considered question.*

Sunday assessments to attain his licence. One of the excellent course presenters, Robert Broomhead VK3DN, showed a video of an Amateur Radio International Space Station (ARISS) session that he and other amateur radio volunteers collectively facilitated at a Melbourne Primary School. Such a prospect greatly excited Archie. His initial request to Robert for such an event at his own Primary School was very supportively welcomed, and the rest is history. So now let's get back to the main story, of the actual space-station event in March at Templestowe Valley Primary School.

### Arrangements

Resulting from school community enthusiasm for the idea, a big event was planned. It took place in a main room for 250 people plus a seating overflow area on an adjoining under-cover basketball court supported



*Photo 6: Just as exciting for the audience.*

by large video monitors and PA for another 250 guests. An elaborate multi-camera volunteer-provided setup in the main room enabled those in the overflow area not only to hear proceedings but also to clearly watch all that was happening in the main room. On this balmy night visitors arrived early and all seats were soon taken

with an air of anticipation. Special guests included the local Member of Parliament and State Opposition Leader, principals and staff from local STEM-connected schools, current parents and former teachers and students. Robert VK3DN, as Master of Ceremonies, got the evening off to an excellent start and after a warm welcome from the School Principal Graeme Renshaw, strong audience enthusiasm continued to grow all the way up to the space contact over half an hour later.

Archie's well prepared mother, Faith, broadly introduced the ARISS project and shared her observations of amateur radio with further details provided by Robert. By the precise moment for scheduled Space Station connection anticipation was at a peak. At the other Australian end, the tracked ISS radio signal was relayed from the impressive ground station of Shane Lynd VK4KHZ over the telephone

network to a Tele-bridge Unit located at the school. Audio quality in both directions proved excellent throughout the 10 minute contact. Everyone heard everything, clearly.

### The QSO

Leading up to the scheduled contact anticipation continued to grow, but would it all work? What if something went wrong before such a large gathering? Precisely at the predicted time there miraculously was the Space Station with perfect audio. Not a minute to lose. Following a prior all-of-school think tank on questions to ask Scott ten students prepared twenty thoughtful questions in advance and then took it in turn to ask him during the QSO. Amongst them and for one of his three questions Archie announced



*Photo 7: Another curly question in quick succession kept Scott busy.*

his callsign then asked Scott how amateur radio conditions in space compared to earth.

All questions were thoughtful and Scott's meticulously timed answers were informative, helpful and exciting for all. The video-recorded event highlights the enthusiastic reactions by questioners to each of Scott's immediate answers. It wasn't just the questioners who were excited. This was matched by audience reactions. In written form here and apart from Archie's amateur radio question the following others were included amongst the 20 questions asked:



*How many astronauts can work in the space station and what do they do?*

*What are you researching?*

*What is the most extraordinary thing you have seen in space?*

*Have you ever been in a space emergency or felt scared?*

*How does the spaceship move without hitting something?*

*What is the greatest risk to your space station?*

*Have you discovered anything new?*

*How do you have a shower and wash your hair?*

*How long can you stay in space?*

*How does your body feel when you re-enter gravity?*

*Is the ISS at risk of being hit by a meteor?*

*What do you eat?*

*How long does it take ISS to circle the earth?*

*If you could take 5 personal things to space, what would they be - did you take your guitar?*

*What do you have to do to train or prepare to go to space?*

ground station, the Principal and staff of TVPS, students and parents and friends. A video recording of the live Q&As may be heard at <https://www.youtube.com/watch?v=yYYWxvxdTZA&t=152s>

### **Archie's reaction (in his own words)**

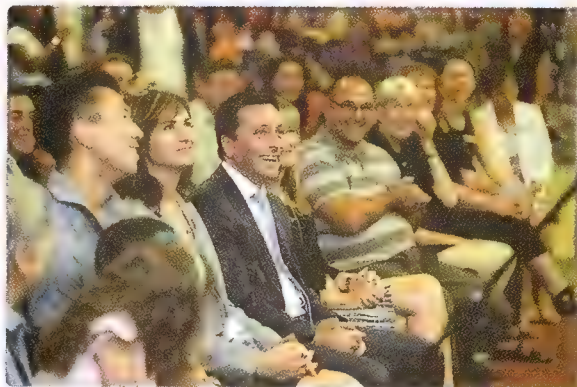
There is no mistake that was the most extraordinary night in my whole life. After nearly a whole year of waiting, the night I had been waiting for had come. I was quite nervous, my mind drifting at various times of the day, wondering if the QSO to the ISS would work or if this was all for nothing. But the day was here.

At 7:30 pm, the voice of Robert going through the radio, the anxious wait for Scott Tingle's voice and everyone holding their breath, there was nothing like it. Finally, the voice of the astronaut rings out from the radio, indicating my turn to ask my question. I release the tension in my body and speak. This is what happened in my eyes. The world seemed to freeze as I spoke.

But, half an hour later, it

was all over. It was quite incredible that a short 10 minutes could change a life and also inspire so many people. As I think about it, the night was a short one but also was a long one. I could finally release my breath,

one that I hadn't known I was holding. But I knew the hard work from so many people had paid off. My job was done. I had achieved something I waited for a long year and inspired many people, exactly what I wanted. But I need to say something. Like me, there are many people who inspire others,



*Photo 9: With perfect audio both ways and great Q&As the ten minute QSO progressively heightened enthusiasm.*

but usually there is another person who has inspired another. Like John Costa. He has an incredible story behind the scenes. He had inspired me to do what I would have never done without him. After saying this, I have to acknowledge the many people that helped me and inspired me to do better: my mum, John, Robert, Tony, Ralph, Damian, Jack and the many others. So, with this article John and I have put together, we hope we inspire amateurs to do the impossible.



*Photo 8: Archie VK3FTOY excited to hear Scott KG5NZA answering his question about radio conditions in space.*

All too quickly and again precisely on time after twelve months of meticulous planning the ten minute QSO and all its anticipation came to sudden end as the ISS shadow passed by Australia, just in time for all questions to be asked and well answered and final thanks quickly sent to astronaut Scott Tingle KG5NZA. This was immediately followed briefly by thanks in turn to NASA, ARISS, the Queensland



*Photo 10: Archie warmly acknowledged by the audience for triggering the event.*





Photo 11: Caption missing here.

### The aftermath

When something goes especially well there's no mistaking it. Everyone from students, families, school staff, guests and special guests alike were on a high and the brief concluding formalities following the link-up echoed this. The School Principal Graeme Renshaw said, among other things, that this had one of the most exciting events he had experienced at the School. The local MP, who was also in attendance for the event, showed the audience an 'app' which his teenage son had specifically installed on his mobile device that same day for tracking the ISS. Of all the smiles, Archie had the biggest, from ear to ear and his role in triggering this great event was warmly acclaimed by those present. For all the amateur radio technology and operational complexity involved in this 'amateur' event the outcome was precise and flawless. If only the same could be said of some of our major telcos, banks, Bureau of Statistics and NBN! Significantly this event is yet another tribute to the spirit, culture and value of amateur radio. Archie is eager to continue in his hobby and within the constraints of school, football and basketball plans to learn more via his home station on VHF and UHF at this stage

and EMDRC membership. People in his school and associated STEM schools now know what amateur radio is all about and the school is talking about establishing a radio club. Archie will be giving a brief presentation on this event as part of a special day for

prospective amateur radio licensees at EMDRC later this year. The spirit of amateur radio lives on!

### Acknowledgements

For this great and memorable night so many of the Australian amateur radio fraternity and WIA members have offered their time, expertise and goodwill for arrangements, technology and event operations,

including collaboration with NASA, ARISS mentoring, Ground Station provision by Shane Lynd VK4KHZ in Queensland, audio video setup and production and MC role on the night. In particular we warmly thank Robert Broomhead VK3DN, Shane Lynd VK4KHZ, Tony Hutchison VK5ZAI, Jack Bramham VK3WWW, Ralph Parkhurst VK3LL, Damian Ayers VK3KQ, Alan Conrau and acknowledge the support of the WIA and its President Justin Giles-Clark VK7TW, ARISS Australia and NASA. From the outset TVPS Principal Graeme Renshaw, teacher Jane McPherson, other staff, Faith Toy and families have been highly supportive, and the response of students has overwhelmingly justified all the effort involved.

*\*Major Tom is a fictional astronaut referenced in David Bowie's songs from 1969 "Space Oddity", "Ashes to Ashes", "Hallo Spaceboy", "New Killer Star" and music video "Blackstar". The term is used in this title with creative licence.*

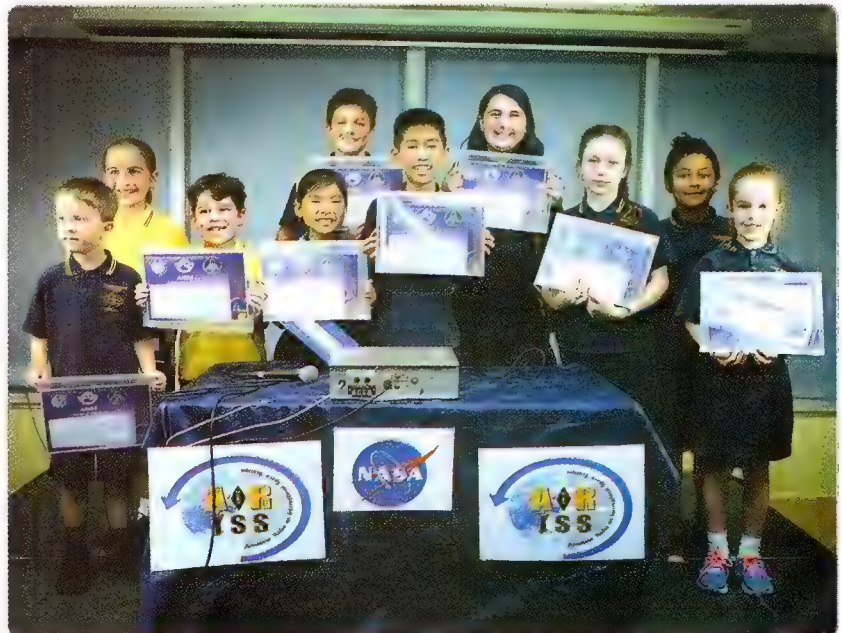


Photo 12: The Questioners kept Scott very busy for the QSO and apart from their own excitement were also very pleased to receive a special ARISS participation certificate.



# SOTA Italy

Brian McDermott VK3BCM

Following on from my last article, "The Journey to Europe", I can now provide an update on the successful and unsuccessful activations in Italy. In the last article I gave a summary on my upgrade from Standard to Advanced so that I could operate in the UK and Europe.

The reason I was keen to activate in Italy was that all the summits in Italy had recently been re-surveyed, therefore, a significant number of summits as yet have not been activated.

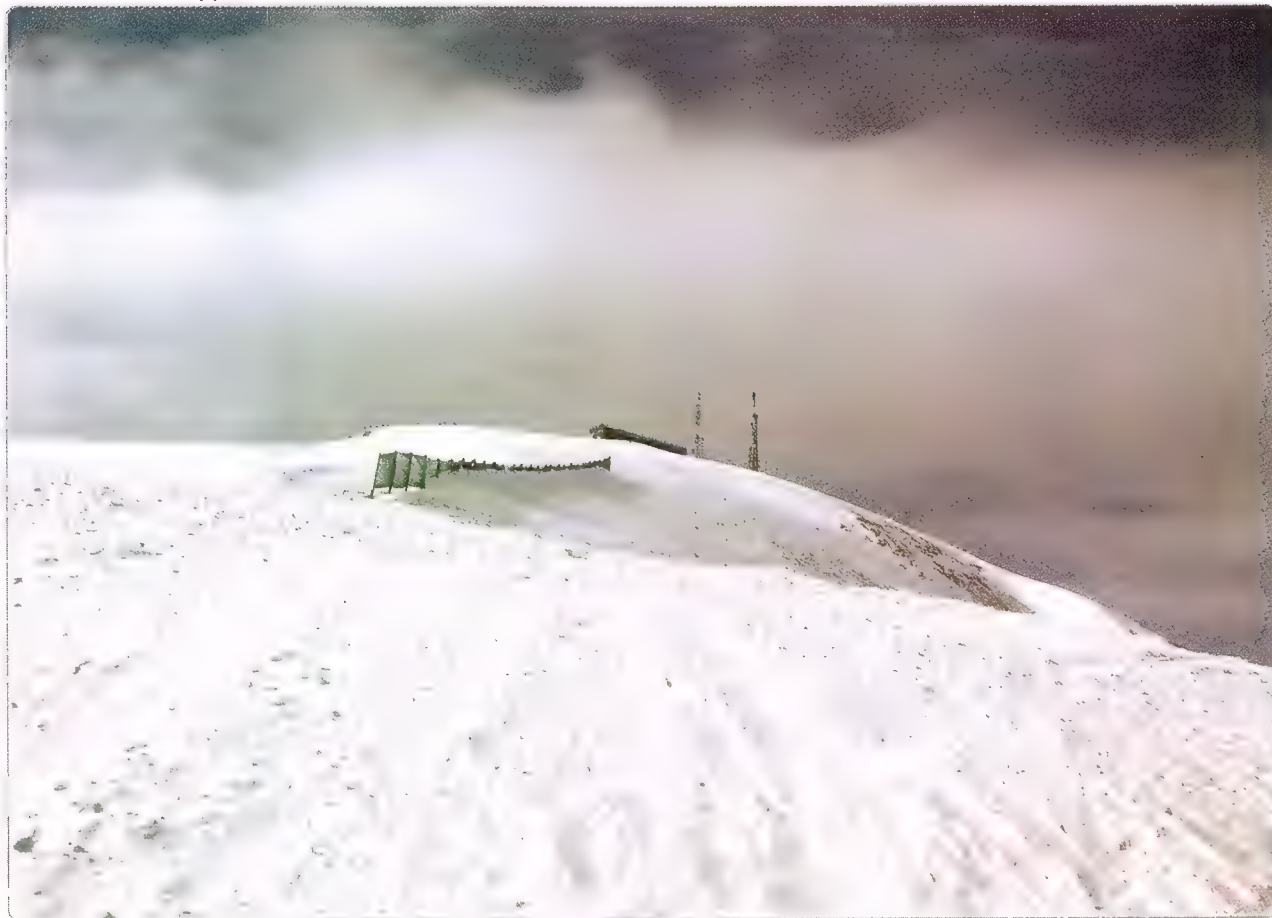


Photo 1: Col Rodelo.

A chance to leave my mark forever on the summit database as the first activator.

Our first port of call for the skiing part of the holiday was Campitello in the Dolomites. An extensive ski area in Northern Italy bordering Austria. The area has significant ski lift and snow making infra-structure (450 lifts plus 4500 snow guns). The ski season thus far was fair/good with the resorts making a lot of snow when conditions suited.

Photo 2: The final approach to Col Rodelo summit.





The target summit in Campitello was Col Rodello (I/TN-089). This was an 8 point summit with an additional winter bonus of 3 points. Access to this summit was via a 100 person Cable Car which placed me within 150 metres of the summit. The approach I took was to take the radio gear to the locker, ski for part of the day, return the ski's to the locker, then catch the cable car back to the top.

The climb to the summit was up a 40 degree snow covered incline to the summit area. I needed to tread carefully with significant drops on both sides. Snow was 1.5 metre deep in places and icy in others. The climb took about 15 minutes, another 10 to setup then I was off and running. The photo is of the summit looking up from Campitello.

Scanned across 40 metre band looking for a spare frequency, this was a challenge as every man and his dog was out. Found a spare frequency and posted a SPOT. I was overwhelmed with the response. Put the headphones on as the music

was blaring out from the pub below. The challenge I had was picking up the different accents from the many chasers.

I managed contacts in 11 countries and Summit to Summit with Greece and Poland. I tried other frequencies with little success. I was very cold by the time I finished with the temperature around -6 C, the things we do for SOTA.

The next opportunity I had to undertake further activations was during our visit to Sorrento, just south of Naples. I aimed to activate 2 summits on the Isle of Capri and possibly Mt Vesuvius. All three had not been activated.

We caught the ferry from Sorrento to Capri. The Island of Capri has an interesting history. The city has been inhabited since early times. Evidence of human settlement was discovered during the Roman era when the foundations for the villa of Augustus were being excavated, giant bones and 'weapons of stone' were discovered. The emperor ordered these to be displayed in the garden of his main residence, the Sea Palace. Modern excavations have shown that human presence on the island can be dated to the Neolithic and the Bronze Age.

Augustus' successor Tiberius built a series of villas at Capri, the most famous of which is the **Villa Jovis**, one of the best-preserved Roman villas in Italy. In 27 AD, Tiberius permanently moved to Capri, running the Roman Empire from there until his

death in 37 AD.

If you get a chance have a look at the topography of the island. It varies from sea level to over 500 metres. We caught the local bus to Annacapri, then the chair lift to Mount Solaro. The chairlift was second generation but would have pre-dated the old Arthur's Seat chairlift on the Mornington Peninsula. 11 Euro return. When we arrived at the summit we were just above the clouds and I could setup in the restaurant area, with a lounge chair....a comfortable activation.

Setup ok, spent the usual 10 minutes trying to find a spare frequency on 40 metres. Finally did, two summits to summits and contacts in 5 countries between 40 m and 20 m. I noticed that some European activators were on 5.455 MHz, put up a Spot and gave it a try. No luck. I did receive an email from Kurt HB9AFI that night advising the 60 metres was not part of the Italian band plan.....NOTE TO SELF check each country's band plan. By the time I completed the activation the summit was shrouded in cloud and the temperature had dropped by 5-6 degrees.

We walked down to Capri for lunch. We checked the local map and decided that I probably had time to activate Mt Tiberius and check out the ruins Villa Tiberius from 27 AD. Put up an ALERT and started the climb. Arrived at the summit, 6 Euro to check out the ruins but they closed at 4pm, it was now 3:40 pm. Managed to inspect the ruins for free and decided to setup just outside the historical area and within the activation zone.

Decided to try 20 metres and picked up my first contact then silence except a strong station in Cyprus. Once again I spent time looking for a spare 40 metre frequency, posted a Spot and prepared for the onslaught. I must admit I'm getting a lot better at picking up the accents.

A successful activation with contacts from 7 countries and another summit to summit.



Photo 3: Operating in comfort on Solaro.





Photo 4: Crater Vesuvius.



Photo 5: Operating on Vesuvius.

The next day we had planned to climb Vesuvius, another possible activation. Train to Pompeii, bus to Vesuvius then the climb up the volcano. I was on a 1 hour 20 minute time limit. Access to the volcano rim is now regulated with areas roped off where it's considered unsafe. The volcano is still active. I setup just below the rim but was not confident that I was in the activation zone. When we got back to the apartment I was able to establish that I activated at approx. 1195metres with the summit at 1281 metres.

Unfortunately a failed activation. I was a little disappointed but really enjoyed the walk and the view. I've put a note on the SOTA database indicating that it's not possible to activate Vesuvius without special permission.

From the top you could see the Isle of Capri and down to the Gulf of Gaeta. My uncle flew for the RAF in WW2. He bailed out of his Spitfire in 1944 into the Gulf of Gaeta and was never found. The visit to the area was of special significance to me.

The equipment used during the Europe trip was an Elecraft KX3, 40 m Invested V with 1:1 Balun, 5 m squid pole and a Goal Zero Sherpa 100 battery.

From Italy we flew to Gatwick in the UK. In my next update I cover activations in Wales, England and Scotland.



# WIA Achievement Awards

WIA Board

At the Wireless Institute of Australia Annual General Meeting held at SeaWorld Conference Centre, a number of high achievers were honoured with the presentation of achievement awards.

## GA Taylor Medal

Ewan McLeod VK4ERM from Kenmore QLD received the GA Taylor medal. The GA Taylor medal was presented in recognition of exceptional service to The Wireless Institute of Australia. The GA Taylor medal is the highest ranking of all the WIA Merit Awards.

## Chris Jones Award

For his work through promotion and training in Amateur Radio with the Radio and Electronics School, Ron Bertrand VK2DQ was awarded the prestigious Chris Jones Award. This award is in memory of Chris Jones VK2ZDD (SK) and is presented to radio amateurs who have made an exceptional contribution to amateur radio and the Wireless Institute of Australia.

## The WIA Publications Committee Awards

Publications Committee Awards were announced and awarded to:

- Trevor Quick VK5ATQ and Stuart Fillmore VK5STU who received the Al Shawsmith Award for the best non-technical article "VK5 School Holiday Technology Program is a Resounding Success" published in the May 2017 issue.
- Peter Gibson VK3AZL received the Higginbotham Award for service to the amateur radio community and for Peter's service to the WIA and the Publications Committee over at least 32 years, serving as the



Main photo: Ewan McLeod VK4ERM. L2R: Tim Dixon VK5ZT, Trent Sampson VK4TS and Peter Schrader VK4EA. (Photo courtesy of Marcus VK5WTF).

lead Technical Editor for most of that period.

- Jim Henderson VK1AT received the Publications Committee Technical Award for his article "A 35 to 4400 MHz Signal Generator" published in the November 2017 issue.

## Technical Excellence Award

Three Technical Excellence Awards were announced and these were presented to:

- Peter Parker VK3YE for his prolific promotion of amateur radio in Australia and making the hobby accessible to new and old through his YouTube channel and eBooks.
- Timothy Dixon VK5ZT for his work promoting his hobby, openly sharing his extensive modifications to microwave equipment and furthering experimentation in microwave and optical bands in Australia.
- Glenn English VK1XX for sharing his technical skills and

knowledge to improve the hobby in a variety of technical fields.

## WIA President Commendations

Four WIA President Commendations were awarded to:

- Joe & Julie Gonzales VK3YSP & VK3FOWL for promotion of amateur radio in schools, engaging youth and school communities and sharing their projects and findings with the amateur community.
- Grant Willis VK5GR for his work with the WIA, contesting and in past advocacy within the IARU.
- Trent Sampson VK4TS for actively promoting contesting in Australia, engaging with clubs to improve their contesting skills and supporting contesting in Australia and the region.
- Paul VK5PAS for his work with the VK5 parks award, promoting WWFF and opening up an aspect of the hobby to the wider community.



## 10 Year Assessor Service Awards

Sixteen WIA Assessors reached the milestone of 10 years of service conducting assessments, and those present were presented a Certificate and pin by the WIA Exam Service to mark the occasion:

Daniel Cliff VK2DC  
Brian Conner VK2ZBP

Mark Plowman VK2MP  
Peter Burgess VK2ZZA  
Edward Thrift VK2ARA  
John Chenoweth VK3ZX  
Ashley Clark VK3SSB  
Rex Ford VK3ARG  
Walter Cornell VK3FGC  
Ewen Templeton VK3OW  
Arnold Put VK3YAP

Andre Van Zyl VK3AVZ  
Peter Schrader VK4EA  
Cecil Kenny VK4CF  
Stephen Reakes VK4QQ  
Patrick Daley VK8ZMX

Congratulations and Well Done.

## WIA Radio and Electronics Convention - Beyond 2020

# AGM Report

WIA Board



Part of the membership present at the meeting (Marcus VK5WTF).

The WIA AGM was held on 19 May 2018 at the SeaWorld Convention Centre on the beautiful Gold Coast. The official number attending the AGM was 125 voting members and we kicked off just after 9 am.

Minutes were approved and the President's Report was presented and this can be found in below:

*The key focus for the Board has been ensuring that all of the activities of the Institute are directed toward achieving the objectives of the Institute and to embark on an ambitious change agenda.*

*As the "peak" body representing Australian Radio Amateurs both within Australia and internationally,*

*these objectives distil to two survival goals: 1) to lobby for and protect the spectrum access; and 2) to ensure survival though continued relevance of the hobby.*

*Attracting new amateurs, their training, assessment and qualification, undertaken in partnership with the clubs, including the functions undertaken in accordance with the Deed with the ACMA, all work to achieve the objectives of the Institute. There is a challenging and large change program currently in play and as we all know cultural change take years not months!*

*This change agenda is to shift this organisation into a much more*

*sustainable and future-proofed state. One that can fund development, ideas and grants, educate and training the amateurs of the future, with no single point risks and self-determine our future in an international, national and local regulatory landscape.*

*To start to achieve this, the current Board is focused on being open and transparent with members, such as publishing Board minutes, terms of reference, position descriptions and documents. It is trying to consult with members more through a wide range of mechanisms. We are listening.*

*The Board is also actively making the organisation more sustainable with a longer-term focus - the 2018 budget has a high level of provisioning for a range of committed activities.*

*The 2017-18 Board suffered from a lack of documented organisational memory of the WIA especially in the finance area because of an almost complete change of the Board. The Board is addressing this through a revised organisational structure, increased focus on process improvement and alleviating the single point risks it has identified.*

*As anticipated and advised prior by the Board, the WIA posted a deficit for FY 2017. The Board has already put in place measures to improve this in FY 2018. The Board is already seeing improvements through making the AR magazine bi-monthly and a range of other cost optimisations. The Board continues to be of the opinion*



that book-keeping is best performed by an external company for the sake of consistency and continuity because of the significant amount of manual data entry and reconciliation required. Streamlining and automation planned in the future will hopefully see this requirement diminish through time.

Membership numbers continue to be a concern as the Board with year on year drops in memberships, predominately concessional members. The Board has decided to continue the concessional member rates. Membership engagement is a constant focus for the Board along with attracting new members and this will be a focus area in 2018. The Board has also introduced an Associates Program to promote and market amateur radio to non-amateur radio operators.

There are over 400 volunteers Australia-wide who perform the various functions of the Institute as well as the two staff members in the national office in Melbourne and we send a huge thank you to all these people for helping the Institute achieve its objectives.

The Board is actively working toward "steering not rowing the organisation" but the goal remains elusive to-date.

The Board views the LCD submission to the ACMA as an once-in-a-lifetime chance to position this experimental hobby for the future. The session later today will give people a sneak-preview and outline what will be in that submission before it goes back to members for their final comments and then submission to the ACMA.

The Board has an excellent working relationship with the ACMA and is actively planning what the amateur radio service will look like under the new Radiocommunications Act along with the new service contract arrangements after the Deed expires in February 2019. It is recognised that any new contractual arrangement with the ACMA will need to be based on the real-cost of delivering the service and this will more than likely involve increased cost of services.

The voluntary contribution to these activities by the WIA Nominated Training Organisation, the Assessors and the many others at Institute and club levels, provides a service at a far lower cost than could be otherwise offered, particularly by a commercial for-profit organisation.

The Board is actively involved in the IARU Region 3 and ITU activities and funds its commitment to send representatives to these activities. This international representation does not come cheap but members have told us that this is one of the primary reasons they support the Institute.

At the operational level the Board is actively looking to improve the processes and functions using continuous improvement principles. A ticketing system has been introduced to streamline the capture, processing and tracking of the many requests that are made to the institute.

As a volunteer based Not-for-Profit organisation, the Board is always seeking the skills of members who can help extend the scope, efficiency and effectiveness of the WIA – not just technical skills, but also in areas of management, marketing, finance, media and strategy. So if you are seriously thinking of helping out please catch-up with one of the Board members over the weekend. We are actively looking for a female Board member.

*I would lastly like to say thank you to my fellow Board members who like me, I am not sure knew quite what we volunteered for!*

*Thank you.*

The Directors' Report was presented to the meeting and some good questions were asked and answered and the report was passed.

Director Greg VK2GPK outlined the two audits of the 2016 accounts and although there was a cost centre error identified in the second audit, the underlying profit and loss did not change. This led to a question about when we would see the WIA back in the black and Director Greg VK2GPK outlined and showed the first quarter Profit & Loss statement that was positive for most months of 2018. Greg also raised the issues that the incoming Board was presented

with in relation to the finances and organisational memory.

Another question for the Board was in relation to marketing and promotion of the hobby, greater levels of advertising, foundation information and other society's articles. Greg VK2GPK outlined the President's Lunch discussions and that a group of six attendees have agreed to form into a marketing group (the next 100 group) for the hobby.

A question was asked about a recent public letter relating to expulsion. Director's Justin VK7TW and Greg outlined that it was a member-initiated petition and that the Board was deliberating and that no-one had been expelled.

A question was asked about the Freedom of Information (FOI) request made and Director Justin outlined the ACMA application of the FOI Act legislation to arrive at the documents released.

A final question was asked about the assessment recovery costs and Director Justin outlined that it was based on a 2009 cost-recovery model and the Board is looking to re-base the model with agreement from ACMA. However given the Deed expires in February 2019, this may be wasted effort.

There was a minute's silence for the Silent Keys in the last year, including life members John Adcock VK3ACA, John Rogers VK7JK and Jim Linton VK3PC.

The Audit Report was passed and comment made that the WIA is on a sound financial basis.

The Auditor was appointed and questions answered about there being an audit of the books in 2018.

The Constitutional amendments were read to the meeting and these can be found in AR March-April 2018 magazine. There was a question about Board tenure and Director/Secretary Peter VK8ZZ outlined that a full Constitutional re-write process is a 5-year iterative project. The vote was passed with greater than 75% of members present in favour.

The election declaration was made and successful candidates congratulated – Brian Clarke VK2GCE and Aidan Mountford VK4APM. It



was noted that there is still a vacancy and Justin outlined what the Board is seeking.

John Marshall was elected as the Returning Officer for 2018.

A vote of thanks was given to Office staff Bruce and Petra and over 400 volunteers including the Committee Members, Assessors and Learning Facilitators.

Tony VK2KZ from Waverley ARC showed a great video promoting Sydney which is the location of the WIA AGM in 2019. This will be part of the celebration of the Centenary of the Waverley Amateur Radio Club.

The AGM was closed 14 minutes overtime.

The Directors Report and Financial Report can be found on the

WIA website at: <http://www.wia.org.au/joinwia/wia/about/>

The video of the AGM is available on the WIA website:

<https://www.wia.org.au/joinwia/wia/2018agmvideo/>

## WIA Radio and Electronics Convention Beyond 2020

# Open Forum Report

### WIA Board

Following the WIA AGM on 19 May 2018 at the SeaWorld Convention Centre there was an Open Forum session. This session considered the reports from committees and the following is a summary of the discussion points that were raised.

Concern was expressed that WIA Advisory or Regional Committees should be re-considered and possibly revitalised.

Renewal of licence notification through snail mail:

It was raised that amateurs can ask for the ACMA to move the renewal date if it is inconvenient. Could there be consideration given to automatic notices or even SMS reminders?

The noise floor in suburbia has risen substantially and it is a real issue for the amateurs on HF and VHF/UHF. There was interest expressed at the Open Forum about forming a group / committee of interested people to try to address the interference issue. It was acknowledged that this would be a long and hard road to address but we need to start somewhere. The ACMA acknowledged in the Five Year Spectrum Outlook that the increasing noise floor is a problem. Comment was also made that the TE003 standards committee has in the past been more focused on the measurement. Political activism may be required to address this serious problem.

A reminder was given that the ACMA has introduced a graduated interference response regime – priorities based on whom, what and how many are affected. The response is proportional to the damage in the community. Reminder was given about wireless power transfer for electric vehicles being the next BPL on steroids! A suggestion was put forward that there are WIFI power levels meter available on smart phones these days.

Comments were made about getting rid of non-functional committees and replace them with functional and effective committees. The Board outlined the revitalisation program that includes creation of new Terms of Reference and Role Descriptions and other documents.

There was a progress report given in relation to the online exam system.

There was some good discussion about how to entice new people into the hobby at a club level. This was about how the Board can support clubs who deliver the services at a grass-roots level and encourage new people into the hobby.

Comment was made that few new foundation licence people know what the WIA is about and what services are being provided. A suggestion was made that new Foundation licensees be given a

one year free subscription to AR magazine.

It was pointed out that the number of student members is declining and therefore we will not have the next generation for the hobby. Harvey Bay Primary School was put forward as an example of a STEM program and how to involve amateur radio to support STEM teaching. Suggestion was made to look up the work of Dr Michael Meyers from Re-engineering Australia.

An example of technology convergence was provided where there was a combination of an android smart phone and radio via the 3G/4G phone service. These are Network Radios that have come from the UK. This is an example where it bridges the gap between the internet-connected generation and amateur radio.

The Board thanks all who made comments and these have all been noted and will be considered by the Board at future meetings.

The Open Forum report can be found at:

<http://www.wia.org.au/joinwia/wia/about/>

The video of the Awards and Open Forum is available on the WIA website:

<https://www.youtube.com/watch?v=4wX367M1nOw>





## DXTalk

Luke Steele VK3HJ

e [vk3hj@wia.org.au](mailto:vk3hj@wia.org.au)

Solar activity remained at very low levels for most of May and June, with a slight lift in indices towards the end of May and again at the end of June. In fact, on 20 June, the solar flux reached 82.1 and the sunspot number reached 54, the highest it's been since September last year.

Despite the occasional lift in solar indices, propagation on the HF bands has been generally poor. Some DX has been worked on 160 m, North America in the evenings but, even during the winter, there have been many evenings where thunderstorm activity has made copy difficult. There has been a bit of DX on 80 m in our evenings, with Phil W6UC in Bakersfield California heard regularly up on the DX Window, along with a few others. The most active band lately seems to be 40 m, with signals coming in from Europe most afternoons, North and South America in the evenings, along with Asian stations into the late evening. Thirty metres seems to have gone quiet as far as CW signals go but the digital segment seems busy. At this time of the year, DX may be worked on 30 m at any time of the day and night. Twenty metres still shows reasonable activity, with Europeans appearing in the afternoons via the Long Path and again around midnight on Short Path, to the Americas in the afternoons and evenings and with some Asians in our evenings. There is not a lot happening on 17 m and up but there have been some sporadic E openings on 10 m around the country.

A few IOTA activations have been worked or heard, including

VK5CE/6 Craig who activated a number of West Australian island activations including OC-164, OC-199, OC-140, OC-193, OC-170 and OC-220.

KL7RRC/p was active from NA-234 Chuginadak Island, Alaska. Looking at some pictures of their activation shows it to be a spectacularly rugged and remote place!

TE6DX was an IOTA expedition to Uvita Island (NA-155), Costa Rica.

Eddy XV1X has been active daily from Vietnam on a number of bands.

Throughout May, the First Class CW Operator's Club was celebrating its 80<sup>th</sup> Anniversary with many special event callsigns.

David WJ2O was active for one day from American Samoa as KH8/WJ2O and a few days from Samoa as 5W0DF, before joining the team heading for Baker Island.

The 50<sup>th</sup> Anniversary of the founding of the International Amateur Radio Union (IARU) Region 3 at a meeting of Asia/Pacific delegates in Sydney is being commemorated by a number of "IARU" special event callsign suffixes. Australia has a special event callsign on air "VI50IARU3". There is an award on offer, qualified by at least five different band/mode contacts with IARU stations on air. Details of the "IARU Region 3 50<sup>th</sup> Anniversary Award" are online at: <http://awards-iaru-r3.org/>

Others on air have been special event stations such as ORARI 50<sup>th</sup> Anniversary commemoration with many Indonesian stations using the special YB50 prefix.

The Israel Amateur Radio Club has been celebrating 70 years with a special 4X70 prefix.

Many special event stations have been on air during June, marking the FIFA World Cup. These include FIFA and FWC suffixes, host city suffixes and participating country suffixes. For more details on the special event callsigns and awards available see: <https://www.qrz.com/db/RC18SA>

### Upcoming DX

DXpedition activity scheduled for May and June includes the following.

**A25A Botswana**, 13 - 20 July. Andre NJ0F plans operation 80 - 10 m; SSB, CW, RTTY and FT8. He will be using a hexbeam and vertical antennas. QSL via LotW, or via NJ0F direct, and Club Log.

**YJ0GA Vanuatu**, 18 - 25 July. Geoff ZL3GA returns to Efate Island (OC-035), and plans operation from 80 - 6 m. QSL via LotW, or via ZL3GA, bureau or direct, and Club Log.

**PJ2 Curacao**, 19 - 24 July. Mason KM4SII will be operating from the PJ2T contest station part of a four member youth-operator team - Youth DX Adventure. Mason is fifteen years old and already a very active DXer. They plan operations on all bands, all modes, with a focus on digital for AS/VK/ZL. Callsign used will be PJ2/KM4SII or possibly PJ2Y. QSL via LotW. For more information about Youth DX Adventure see: [http://www.qsl.net/n6jrl/2018\\_Team/2018\\_team.html](http://www.qsl.net/n6jrl/2018_Team/2018_team.html)

**V6J Micronesia**, 19 - 31 July. A Japanese team will be operating from Ta Island (OC-253). They will



be using 40 - 6 m; SSB, CW, FT8 and RTTY, with a focus on EU and NA. QSL via JP3AYQ, or eQSL.

**ZA Albania**, 5 - 12 August. Waldi SP7IDX plans operation as ZA/SP7IDX from Vlore (JN90rk); 40 - 10 m; SSB and digital. QSL via LotW or via SP7IDX.

**KH8 American Samoa**, 20 - 26 August. W5RF, W5MJ, VE7KW, K5PI and W5SJ will be operating as KH8/W5MJ; 160 - 6 m on CW, SSB and RTTY. QSL via M0URX.

**EX0PL Kyrgyzstan**, 1 - 10 September. A team of twelve Polish operators will be active from Jeti Oguz near Karakol, using HF bands. QSL via SP9KAT, bureau or direct, and Club Log. For more information see: <http://ex.3sun.pl/>

#### **Swaziland now known as Eswatini**

On 19 April this year, in a double celebration of the 50<sup>th</sup> Anniversary of Swazi independence and the 50<sup>th</sup> birthday of King Mswati, The Kingdom of Swaziland has been renamed "eSwatini". Mswati felt that his country needed a name with which his countrymen could identify. Apparently, Swazis have complained that they have been confused with Switzerland, in international matters.

*"In exercise of the powers conferred on me by section 64 (3) of the Constitution of Swaziland Act No. 1 of 2005, I, Mswati III, King and Ingwenyama of Eswatini makes the declaration that the name of the Kingdom of Swaziland is changed to Kingdom of Eswatini,"*

<http://www.africanews.com/2018/05/19/swaziland-name-change-to-eswatini-is-now-official/>

There appears to be no effect on the current DXCC List.

Please email me with any DX related news for inclusion in this column. I am particularly interested in hearing about DX worked or heard in other states, and from newer DXers. I do welcome news from other DXers to add to the DX News!

73 and good DX,  
Luke VK3HJ

## **Silent Key**

### **Jim Swan VK7FJAS**

Jim Swan VK7FJAS has sadly passed away on 15 May 2018. Bob Lambe VK7FRKL passed on the sad news and our sincere condolences to his family and friends.

Jim acquired his licence at the same time as Bob and they were good friends.

Vale Jim  
(Martin VK7MA)



## **NCRG HAMFEST WEEKEND**

**August 25 2018**

Venue to be announced on  
<http://ncrg.info/WP/>

**August 26 2018**

Cyril Jackson Community Hall, Fisher Street, Ashfield WA

### **PROGRAM**

#### **Saturday:**

Tech Presentations  
Club Open Day

#### **Sunday:**

Swap Meet  
Mobile Installation Competition  
Homebrew Competition  
Retail Vendors Present  
Raffle

### **DEMONSTRATIONS**

TRY OUT NCRG'S BRILLIANT  
REMOTE STATION LIVE AT  
NCRG HAMFEST!

### **SHOW OFF YOUR HOBBY**

Let us know about your unique rig or obscure interest with radio, we want to see what you have created.

For tables and presentation reservations,

#### **Contact Us At**

[hamfest@ncrg.org.au](mailto:hamfest@ncrg.org.au)

**Northern Corridor Radio Group**

Neil Penfold State Amateur Radio Center,  
Whiteman Park



# SOTA & Parks

Allen Harvie VK3ARH

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## Access, Bonus points and Remote Summits

Seasonal Bonus adds an extra three points for the activator who activates peaks that have been deemed to be subject to temperature extremes; snow, ice and high winds. This system rewards activators who extend themselves to access sites with seasonal challenges or provides discerning activators with additional points who time activations for qualifying sites with known good access.

The inclusion of a summit in SOTA does not indicate that it is safe, legal or even possible to climb, so all care and planning must be conducted to ensure personal safety. Cancelling an activation due to access or environmental complications is common and ensures we do not get in the paper due to an expensive and unwarranted rescue.

VK4, VK5, VK8 and VK9 do not have defined bonus periods and those that do are described on the table below.

The ARM for the respective association is the definitive source or such conditions and should be checked to verify. <https://www.sota.org.uk/Associations>

Note that winter is often after Queens Birthday and re-open

before the Melbourne Cup long weekend. Information on road closures is not consistent, so checkout your area:

**VK2:** <https://www.nationalparks.nsw.gov.au/alerts/alerts-list>

**VK3:** <http://m.parkweb.vic.gov.au/safety/fire,-flood-and-other-closures/seasonal-road-closures2>

**VK4:** <https://www.npsr.qld.gov.au/park-alerts/index.php>

**VK5:** <https://www.environment.sa.gov.au/parks/Safety/park-alerts>

**VK6:** <https://alerts.dbca.wa.gov.au/>

Bonus points aside, the road closures will place a lot of summits out of reach and in an environment where summer presents as much risk as winter (fire/water), opportunities to access under desirable conditions must be seized.

## Activation Report - Four SOTA summits in Alpine National Park

David VK3IL, Glenn VK3YY and myself, Allen VK3ARH, were keen to get to into remote areas of the Alpine National Park before the winter road closures made access too difficult.

The aim was to tackle five 10-point summits before the weather turns and the winter road

closures make access next to impossible. Initial plans for the weekend of the 19th were cancelled due to work commitments, so the 26th it was.

We watched the forecasts firm and took Friday off to support driving up the day before to start from the park:

The week was spent packing and checking equipment. The plan was to base ourselves at Macalister Springs Camping ground. This will give us 'easy' access to the Howitt Plains and Mt Howitt (VK3/VT-001), exploiting the Australian Alps Walking Track as it makes its way through the Alpine National Park. We were heading out to Mt Marjorie (VK3/VE-012) but you can base here and use the Crosscut Saw to access Mt Speculation (VK3/VE-022). The Vallejo Gantner hut and toilet facilities are excellent and spring water is available. Overall, a 6 hour trip from Melbourne with final access to Howitt car park; two hours' drive on dirt but 2 WD access.

While we took tents, we were lucky enough to be able to camp in the hut. The spring was flowing so no need to carry in a weekend supply of water; just a water filter. Despite the brilliant weather you have to be self-reliant and prepared for harsh conditions. We carried radio gear, tent, sleeping gear, food, harsh weather clothing and first aid kit and the pack came in just under 20 kg.

The four km walk into MaCalister Springs was uneventful and left us to address tea before watching the sun set behind Mt Howitt and the Crosscut Saw.

We were up on the track by 8:30 Saturday morning heading for Mt Magdala (Marjorie). A full day of

| State | Dates (inclusive)  | Criteria                          |
|-------|--|-----------------------------------|
| VK1   | 15 June to 14 October  | Summits > 1200 m                  |
| VK2   | 15 June to 14 October<br>(CT, SC, SM, ST, SW)<br>1 July to 31 August<br>(CW, HU, MN, NT, NW)   | Summits > 1200 m                  |
| VK3   | 15 June to 14 October  | Summits > 1200 m                  |
| VK6   | 1 December to 28 February (CG)<br>15 November to 15 March (PI)<br>1 October to 31 January (KI) | All as daily temp average > 35°C. |
| VK7   | 15 June to 14 October  | Summits > 1200 m                  |





Photo 1: Million dollar views from Mt Howitt (L: David VK3IL and R: Glenn VK3YY).

hiking was ahead of us in perfect conditions being with clear, sunny skies and a moderate wind.

Given that all of us were carrying APRS tracking devices and the recently (previous day) commissioned VK3RHO digipeater which provided excellent 2 m coverage in the area, every step was being broadcast and I'm sure at least one chaser noted us walking through the AZ of a 10 pointer being Howitt. Three hours later we were on Mt Magdala and after deploying EFHW antenna and KX3 and with patience from the chasers, we were all qualified. 40 m was quiet with 20 m providing VK6 and ZL contacts and 80 m working for local stations. This is typical of operating conditions as of late and is the driver behind ensuring activations can support 80 m.

Being aware of the hiking still involved before dark, we packed up and headed back to activate Mt Howitt.

This is what we were here for. We arrived at Mt Howitt in cold, perfect conditions. The summit is open and supported the deployment of David's 40 m EFHW. We were rewarded with a pile up addressing locals and DX stations.

Being aware of the conditions and what could be wrong, we continued the walk back to Macalister to arrive just before sunset. To our surprise, we found a warm and cosy hut as other hikers had arrived and already got the fire going. After a big day there was nothing more to do then address tea and head to the sleeping bags for a well-earned rest.

The view of the moon through the mezzanine window of hut was mesmerising.

Sunday saw us up and back at the car by 8:30 am. First activation was VK3/VT-004 Bryces Plain. This site does not require a hike as access is via a 4WD track off Howitt Road to an open summit shared with comms and weather equipment. A straight forward operation and, given the clear access, considered a fair reward for the previous days' effort. Once qualified we head back down Howitt Road to take on Mt Reynard (VK3/VT-002). This is located close to the winter closure gate on Howitt Rd, so would be possible to activate during the bonus season with a modest walk/ski in.

We had checked out access on the way in and had already located





Photo 2: Sitting on top of Mount Marjorie (David VK3IL closest then Glenn VK3YY).

a point on Mt Howitt road and had formed a plan to avoid the marsh and locate a track. Both Glenn and I had previously activated this site via bush bashing so keen on locating the track that is on some maps. Yes, once located it was a clean run to find ourselves on a large clear summit that again supported the use of large wire antenna. Worked all comers and packed up to head back to the car. We followed the track to the clearing of the valley and came out lower and hit the marsh early. The bridge is broken and only acts as a marker but still a good spot point to cross what can be a very wet area.

Mt Tamboritha VK3/VT-011

was on the agenda, however we decided to leave as we would not have qualified and made it back down in daylight. This summit will be accessible during the bonus period as not behind closed gates. We had a six hour drive back to Melbourne and I had an additional two hours further, so happy to leave Mt Tamboritha for another day and get home before tomorrow.

We managed four of the five and had a fabulous weekend. This is an exceptional part of Australia with numerous opportunities for all activators. I can only recommend everyone gets out and activate Alpine summits, with due care and planning.

**VK3IL:** <http://vk3il.net/southern-alps-26-27-may-2018/>

**VK3ARH:** <https://vk3arh.net/2018/06/17/26052018-alpinesummits/>

### Upcoming Activities

VK1 SOTA QSO Party: Saturday 4 August 2018 – Andrew VK1AD

VKFF Team Championship: Sunday 21 Oct 2018

KRMNPA Activation Weekend: Friday 9 - Monday 12 November 2018

Stay safe.

73 & 44 Allen VK3ARH

## Remembrance Day Contest 11-12 August 2018





# VHF/UHF - An Expanding World

David K Minchin VK5KK

## Introduction

This month we have Leigh VK2KRR's round up of WSPR activity as well as details on new 10 GHz, 47 GHz, 76 GHz and 122 GHz distance records set in the past two months. We have a report from Iain VK5ZD on the VK4 microwave activity around the Gold Coast WIA AGM weekend, a report from Dan VK2GG on his 76 GHz activity and Kevin VK4UH's ever popular Meteor Scatter notes.

## WSPR Propagation Report May - June 2018

Leigh VK2KRR reports...

*"Propagation conditions for May and June have been relatively quiet, but there have been some openings, in particular one extraordinary Tropo opening from mid-May. Rather than trolling through the WSPR database for hours on end looking for openings to report on, a lot of the following is information reported to the 6 m and 2 m WSPR pages on Facebook."*

### 50 MHz WSPR

*"Winter season Sporadic E seemed to begin around 9 May, with Phil FK1TS, New Caledonia, making a weak path to Sydney with Peter VK2HC. Later in the day ZL2IT was hearing Allan VK2EFM and VK2HC."*

10 May; Andrew VK5MR at Roxby Downs had all the signals, hearing VK2HC, Rob VK1KW, and some excellent signals from Nigel VK6CPU down to -5 dB.

21 May; Phil FK1TS had paths with VK2HC, VK2DVM and a 2688 km path with Jim VK3II. Jim also received VK4TVL.

23 May; there was one spot from

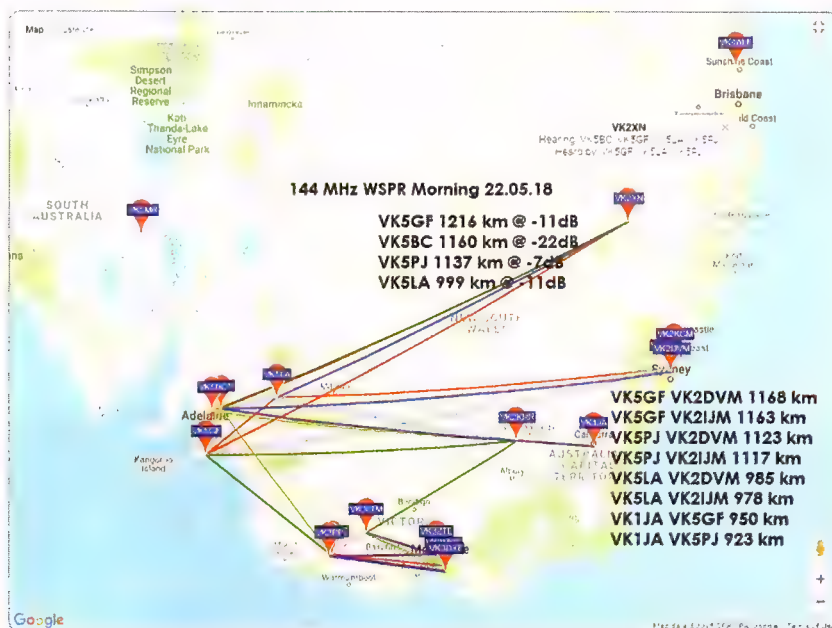


Photo 1: 144MHz WSPR map early morning 22 May.

VK2HC to FK1TS mid-afternoon.

25 May; VK2HC had paths with FK1TS, VK5MR, VK5AYD and VK5KJP. VK3II got to VK5MR.

3 June; VK4TVL had a path with VK5MR.

4 June; 3D2TS in Fiji heard VK3II over an excellent 3909 km path. VK5MR had paths with VK2HC, VK2BMU and VK4TVL.

5 June; FK1TS heard VK2HC.

6 June; VK5MR had paths with VK2BMU, VK2HC.

9 June was quite active with FK1TS hearing VK3II and VK2HC; VK4TVL to VK2XN; VK7AM to VK2BLS, VK2HC, VK2XN; ZL3TKI to VK3OT and VK2XN; ZL4JW to VK2XN; ZL2WHO to VK2HC and VK2BLS; VK4ALF to VK3II, VK1KW, VK2KRR and VK3OT.

11 June; 3D2TS to VK3II at 3909 km and FK1TS at 1335 km; VK3II

to FK1TS and VK2XN; ZL4JW to VK2BLS and VK2HC; VK7AM to VK2BMU.

12 June; VK5MR to VK7AM, VK2EFM, VK2ZMT, VK2HC, VK2BMU and VK2DCT; VK4TVL to VK2EFM, VK2ZMT and VK2HC.

13 June; VK4TVL to VK3II and VK2HC; ZL4JW to VK2HC; VK4ALF to VK3II and VK3ANP.

15 June; VK4TVL to VK2XN, VK2EFM and VK5MR; VK3II to VK4ALF."

### 144 MHz WSPR

"It's great to see that Chris ZL7DX has been active on 2 m WSPR from Chatham Island, east of New Zealand. Chris has had paths on a number of occasions to ZL2IT at 737 km and ZL4LV at 1052 km. This could prove to be an interesting location during the coming summer sporadic E season.





Photo 2: 144 MHz WSPR map mid-morning 22 May, 1561 km across land.

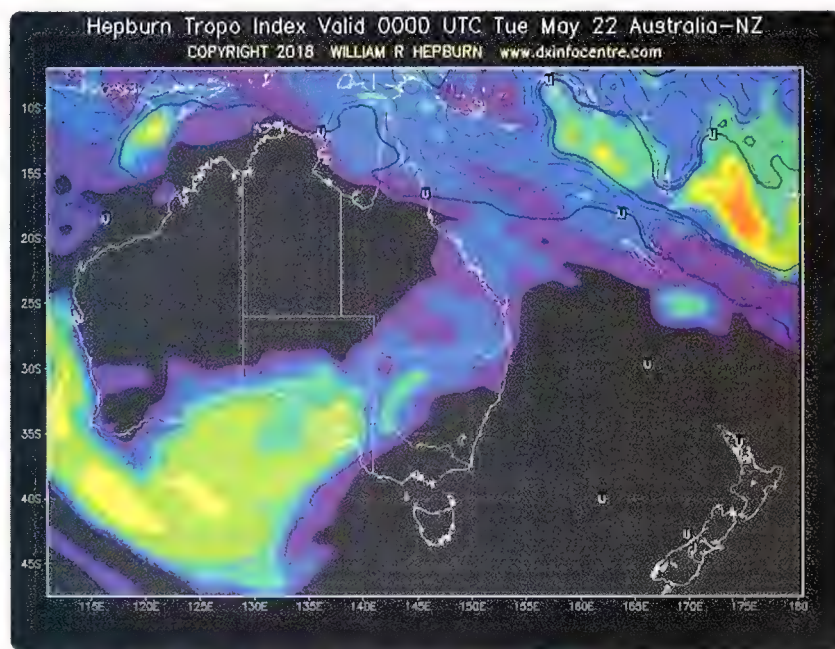


Photo 3: Hepburn Chart, morning of 22 May.

8 May, VK2KRR had Tropo paths to the west with Michael VK5ZEA at Port Lincoln on 70 cm at 1018 km which went on all night. VK5AKK on 2 m was good to VK2KRR with a significant +16 dB and also VK5GF.

13 May, some of the more distant Tropo paths were: VK7HH/r to VK5GF, VK5ADE, VK5PJ, VK3PP and VK3ZAZ; VK3DXE to VK2DVM, VK5GF and VK5PJ."

16 May, in the late evening Alan VK3DXE on the eastern side of Port Phillip Bay (Melbourne) got us going on 2 m with a 2463 km path to Derek VK6DZ near Albany, Western Australia. Later that night and in the morning Leigh VK2KRR near Wagga NSW would make it to VK6DZ on both 2 m and 70 cm WSPR at 2664 km. Brian VK5BC would also make it across to VK6DZ in the morning at

around 2000 km. All these paths are quite significant occurring less than one month out from winter.

We weren't to know at this point but this particular Tropo opening would turn out to be one of the most widespread and longest lasting Tropo openings for quite some time. The high pressure weather system it produced would be very slow moving and the Tropo opening would last for approx 10 days finishing on 26 May: quite incredible.

"Another couple of really significant paths for this opening (possibly rarer than the Bight Path) was a path raised from Peter VK5PJ, Barossa Valley, to Rick VK4RF at Burpengary, just north of Brisbane, with a path distance of an amazing 1561 km. This was then given a small extension by Brian VK5BC to 1584 km, all across land. A fantastic achievement: well done.

Not far across the border, Wayne VK2XN was having a ball with paths to VK5LA at 999 km, VK5PJ at 1137 km and VK5BC at 1160 km and VK5GF at 1216 km."

Heading east, VK5GF made it to VK2DVM at 1168 km, VK2IJM at 1163 km; VK5PJ made it to VK2DVM at 1123 km, VK2IJM at 1117 km; VK5LA made it to VK2DVM at 985 km, VK2IJM at 978 km, VK1JA to VK5GF at 950 km and VK5PJ at 923 km.

On 25 May, sadly, Derek VK6DZ's station was hit by a rough cold front, which swept across from the Indian Ocean. The winds have caused some major damage to Derek's antenna system. Derek reported to me that wind was 'horrific' and that one half of his 70 cm Yagi was found on the road about 100 m from its original location. We all hope that Derek is able to resurrect the mast and antennas very soon.

10 June, the first opening of the season was detected from Hawaii to California with Chris N3IZN receiving the 70 cm WSPR beacon KH6HME a number of times; mostly quite weak at 4074 km."



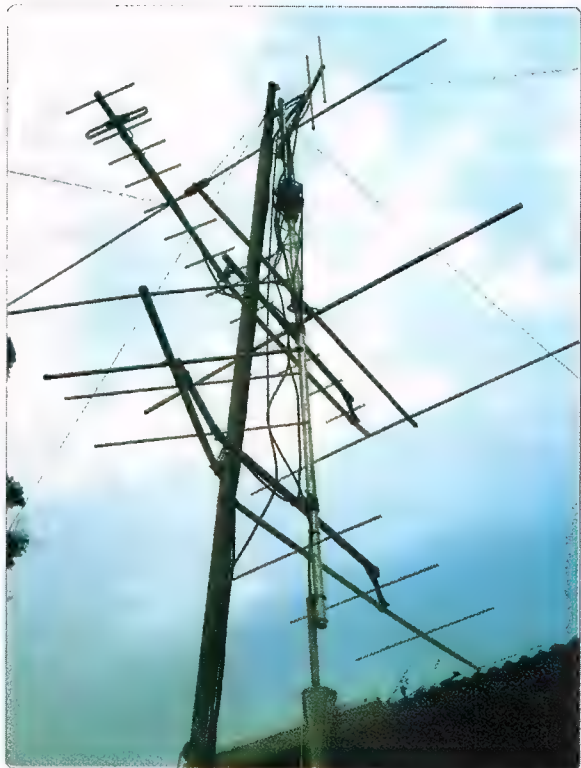


Photo 4: Significant Damage to Derek VK6DZ's Yagi antennas 25 May.

All contributions on propagation and WSPR are welcome; just send Leigh an email at [vk2krr@wia.org.au](mailto:vk2krr@wia.org.au) with the information and he will review for the next write up.

## VK4 10 GHz Distance Record returns to Queensland!

It's all happening in Queensland! Kevin VK4UH reports ... "After several months of prior discussions with Rex VK7MO, a series of terrestrial DX 10 GHz paths were planned to coincide with his visit to Queensland for the WIA-AGM in May. The initial intention was to attempt some long inland paths utilising digital Tropo-scatter and Aircraft-scatter propagation in order for the VK4s to gain experience and familiarity with these modes of communication.

A path was proposed by Colin VK4MIL from an elevated west-facing site near Toowoomba (QG52xi) across to Ballon (QG31tx), a small community west of St George, which showed a promising path profile on Google Earth, over a

distance in excess of 400 km.

Having all met to finalise plans and make suitable interfaces between shared equipment, Colin VK4MIL and Kevin VK4UH set out from Brisbane to the Toowoomba site on Saturday 26 May; a 300 km round trip. We were fully prepared to spend up to 48 hours in the field if necessary to achieve the elusive contact. Rex VK7MO departed Brisbane on the previous evening for his 1200 km round trip to Ballon via St George."

As expected there was no mobile phone or internet coverage available at the proposed

Ballon location. Plans were in place however to set up and commence operation at a pre-arranged time, Transmission period and operating frequency, initially using single-tone QRA64D digital mode. It was uncertain if even the digital contact would be possible over the proposed path; however if the single tone was received then an attempt would be made to complete using QRA64D and then, if that was successful, to try for an SSB contact. If this too was achievable then this path would exceed the existing Queensland 10 GHz distance record which had remained unchallenged since 2004.

On arrival, Rex found that his proposed site was in a depression in the local landscape and locally obstructed. Having no mobile phone coverage, he then drove back to St George township where further discussions were made from a roadside payphone. It was agreed to try an alternative site close to the oil-pipeline which had some

elevation and had borderline mobile phone coverage.

Once set up, VK4UH/p started transmitting the agreed 1000 Hz single-tone identifier in the second period. It was expected to be a difficult path with weak signals. The single-tone carrier was immediately received at S1 level at VK7MO/p and was clearly audible at loudspeaker strength. Nothing however was visible on Rex's waterfall display and his transmitter "declined the invitation to transmit". After a computer reboot a clear receive trace was seen on WSJTx waterfall and the transmitter did switch over to transmit in its period but regrettably no tone was being transmitted. Unable to identify the problem with the digital interfacing on-site, as a last resort, Rex switched modes and called VK4UH/p on SSB. The call was received immediately and 51 reports were exchanged in both directions, completing a QSO and breaking the State Record in a single attempt.

The VK4UH/p station in QG52xi, at an elevation of 730 m ASL ran 60 watts to a 600 mm prime focus dish; the VK7MO/p station in QG31tx at 192 m ASL was running 90 watts to a 1200 mm prime focus dish. Both stations were GPS locked.

One of the challenges faced by the "greenhorns" VK4UH and VK4MIL was that they had never before used anything other than corrected magnetic compass bearings for dish alignment, and then relying on fine adjustment once signals were acquired. This was to be their first "live" attempt, in the field, at using visually sighted reference points and Google-mapping to calibrate their azimuth for once-only dish aiming. It was very satisfying to see this technique actually work.

The final path distance was calculated at 429.70 km, exceeding the previous state record by almost 10% (48 km). Total driving distances by both vehicles, something in excess of 2000 km to make the contact. You don't get many really





Photo 5: 10 GHz equipment used at the VK4UH end of the VK4 Record.

great days like that.

73 Kevin VK4UH".

Rex VK7MO has been travelling through VK2/4 for the past month including attending the WIA AGM and giving a 10 GHz EME demonstration on the Sunday morning during the VK4 Microwave shootout (see below).

BTW: In the photos of the 10 GHz system you will see a very neat portable carry case. At the back of that case you will see the manual for the DARC DYC-8x7 V2.0 "Dynamikkompessor". SOTA operators have been using these for a few years but more recently they have become standard equipment for mmWave operators in Europe (and here) to get a bit extra out of SSB. They are especially good for driving 76/122 GHz bare diode mixers that need a fairly constant IF drive level to actually mix efficiently! The unit uses a SSM2167 chip to give an average of 8 - 10 dB compression. They come with RJ connectors so can be directly plugged in line with the microphone for FT-817/818/857/897. They are 38 Euro posted to VK; for more information go to the DARC website [https://www.box73.de/product\\_info.php?products\\_id=945](https://www.box73.de/product_info.php?products_id=945)

### Microwave activity at the WIA AGM in VK4

Maybe this is going to be a regular

feature of WIA AGMs from now on?! Last year the VK5s provided some "entertainment" at the WIA AGM with demonstrations of Digital ATV, 10 - 122 GHz equipment and 10 GHz EME. This year the Gold Coast AR Club organized a "Microwave Shootout" on the Sunday as part of the AGM

events along with Rex VK7MO demonstrating his 10 GHz EME equipment with the rising moon to Al Ward W5LUA.

Iain VK5ZD reports: "When planning our trip to the Gold Coast for the WIA AGM, Iain VK5ZD, Dave VK5KK and Tim VK5ZT decided to try to extend some of the VK4 VHF-UHF records. We were all travelling by air so baggage constraints limited the amount of equipment we could bring but, after checking the current records, we decided to try 47 GHz, 122 GHz and optical (~474 THz). Before our trip the current VK4 record on 47 GHz was 132.5 km and there were no records for 122 GHz and optical; so anything we did on those two bands would do. In preparation for this exercise many hours were spent online looking at maps before we finally settled on the locations we would use.

Iain flew to Coolangatta on the Wednesday before the AGM while Dave and Tim flew to Brisbane. That evening Iain went to a place called Kamarun Lookout which

is about 75 km south of Brisbane, arriving at about 5:30 pm, just on sunset. Getting there was a bit of an adventure in itself, involving a very narrow road winding up the side of a mountain. Dave travelled to place called McCarthy's Lookout which is about 81 km north of Brisbane. This distance between the two sites is 155 km. Contact was initially established on 10 GHz which was used as a liaison frequency. Dave then transmitted a beacon on 47 GHz which was heard by Iain almost immediately and used to fine tune the dish alignment. Iain then transmitted his beacon which Dave used to align his dish, after which a voice contact was made, first on SSB with signals at 58 both ways then FM as signals were so strong.

Meanwhile, Tim had travelled to a site called the Allan Cunningham Memorial on the Cunningham Highway, about 72 km west of Kamarun Lookout. When the 47 GHz QSO was complete, Iain and Tim turned on their optical transmitters and started looking for each other's light. By this time it was completely dark at Kamarun Lookout and, with the benefit of hindsight, an approximate alignment should have been done while some landscape features were still visible. The actual process involved Iain panning his light back and forth until Tim spotted a brief red flash which gave him an indication where to point his light after which it was



Photo 6: The complete VK4UH 10 GHz portable station.



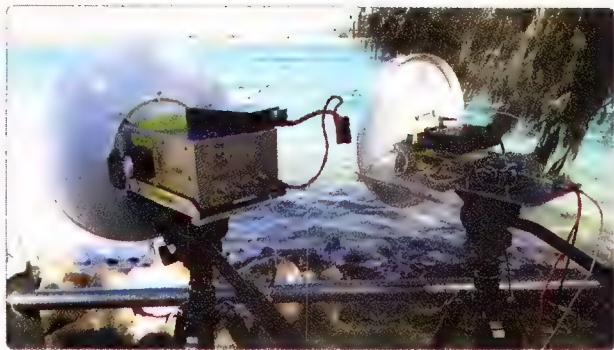


Photo 7: 76 & 122 GHz "Over water test" at the Gold Coast WIA AGM.

quickly spotted by Iain. Once the light beams were pointed in the right direction they were clearly visible and a QSO was completed with one minor complication. Tim's equipment had suffered a knock in transit and his transmitter and receiver were no longer exactly aligned. This just meant he had to make a small azimuth adjustment between transmit and receive.

The following day (Thursday) we decided to try and extend the 47 GHz record even further. Iain and Tim went to a site on the Border Ranges National Park in VK2 while Dave went to a site call Howells Knob. The distance between these sites is 181 km. However, the weather conspired against us and Iain and Tim spent all their time inside a cloud with very poor visibility. Contact was established on 10 GHz but nothing was heard on 47 GHz."

VK5KK Note: Doug VK4OE was also portable at Mt Cootha on 10 GHz but nothing heard on 47 GHz... Too wet!

"The next day, Friday, Iain and Dave had a short range contact on 122 GHz between the balcony of Iain's 8th floor apartment and a car park, a distance of about 400 m. This was mainly just to check that the equipment was working but also served to set an initial record.

On Sunday morning Iain was at Mitchell Park where the microwave shootout was taking place while Dave was at a spot called Single Lady Beach on "The Spit", just north of SeaWorld. The distance

between the two locations was just a few metres over 2 km. With 439 MHz as a liaison frequency, contact was initially established on 76 GHz which was used to fine tune the dish alignment. They then QSY'd to 122

GHz, made some fine adjustments to the dish alignment and completed a QSO. After this Dave made a few contacts on 10 GHz, 47 GHz and 76 GHz with some of the others at the microwave shootout before coming over to join the group. Dave and Iain had a bit of fun demonstrating 76 GHz 'long path' contacts by bouncing signals off buildings at SeaWorld across the water. They even had a very brief signal reflected from a passing helicopter!

73 Iain VK5ZD".

Other stations active during Sunday's Microwave shootout included Peter VK4EA (47 GHz), Doug VK4OE (47 & 76 GHz) and Gary VK4GU (10 GHz). Prior to the weekend Doug VK4OE went out portable on 47 & 76 GHz working VK5KK over 56 km from Mt Crosby Rd to Mt Tambourine

## 76 GHz Activity in VK2 and VK5

Dan VK2GG reports... "I've been interested in microwaves for many years, since 1997 when Jack VK2TRF and I "played" with ATV on all bands from 1.2 GHz up; this

culminated in a "clean sweep" of National ATV records set by us from Mt Conobolas in the Central West of NSW to a couple of notable mountain tops in the ACT. On the same weekend, we set a 24 GHz ATV record using a 23 GHz Gunn for the TX and a Kuhne LNB for Rx."

"Since then, I have experimented with narrow-band transverters on all bands from 2.4 GHz up to 47 GHz, at local VK2 Record attempts and VHF/UHF Field Days, etc. Now, though, my recent interest is 76 GHz and above I have just got my 2 x 76 GHz units working!

73 Dan VK2GG."



Photo 8: VK2GG's 76 GHz Transverter with rotating RX/TX Amplifier.

Looking good for mmWave activity again at the next WIA AGM in Sydney!

While we are on 76 GHz, Iain VK5ZD/5 PF96ca (Nantawarra) and David VK5KK/5 PF95ia (Mt Lofty) set a new VK5 State 76 GHz record of 118.8 km during the recent Winter Field day on 23/6/2018. For both stations this was the first test of new 250 mW transverters; the VK5KK end using a Nurad 300 mm dish with modified horn and the VK5ZD end using a 400 mm deep dish and splash feed. 47 GHz contacts were initially made to line up antenna, 76 GHz signals were heard as soon as local oscillators



| Call sign            | UTC 1st decode | Number decodes | Best signal | Grid   | Distance km |                 |
|----------------------|----------------|----------------|-------------|--------|-------------|-----------------|
| IZ4AIK               | 053500         | 1              | -16         | JN63hv | 15349       |                 |
| IK4DRY               | 053700         | 15             | -11         | JN64bl | 15398       |                 |
| IK4ISR               | 053800         | 3              | -16         | JN54qq | 15456       | Worked          |
| I4EAT                | 053900         | 7              | -14         | JN54wh | 15414       |                 |
| S57RR                | 053900         | 3              | -15         | JN65um | 15282       |                 |
| I4GAD                | 054230         | 1              | -22         | JN54nl | 15476       |                 |
| I25DKJ               | 054730         | 7              | -15         | JN53gu | 15515       |                 |
| I6WJB                | 055400         | 5              | -17         | JN72ck | 15201       | Reported me -18 |
| IK0FTA               | 061500         | 1              | -20         | JN61gv | 15332       |                 |
| DK2EA                | 063600         | 2              | -17         | JO50uf | 15448       |                 |
| <b>Total decodes</b> | 45             |                |             |        |             |                 |

locked. Conditions on the path were poor (high mist level), signals on 10 GHz and above were lower than usual over a number of paths during the Field Dy (winter!).

## STOP PRESS! FT8 6 m EU opening 27 June 2018

Brian VK5BC (PF95jj) reports: "During the last week of June some very exciting openings to Europe from VK3 & VK5 occurred. In the past mid-winter openings have only happened from northern VK8 (Darwin) and in the past 3-4 years from VK4 Sunshine coast area and on occasions extending as far south as Brisbane."

"Rhett VK3WE reported decoding (FT8) US8ICM & UT8IO from Ukraine the afternoon 24 June. Then on 27 June VK3OER & VK5BC decoded several European stations using FT8. Andrew VK3OER between 0559 & 0703 UTC decoded DG1CMZ best -12, PA2M -17 (16467 km), SP6NZ -14, DK2EA -15 & DK8NE -18. Meanwhile Brian VK5BC between 0535 & 0637 decoded several Italian station as well as Slovenia and Germany stations as per the following table above."

"A contact was completed with IK4DRY with -11 sent and -21 received. The band opened again 29 June VK5PJ, VK5BC and VK3OER decoding I6WJB & S57RR on FT8 between 0630 - 0730 UTC. S57RR Roberto then went to JT65 where both Peter & Brian

decoded Roberto with Brian VK5BC completing a JT65 contact with -16 sent and -18 received."

"On 30 June, Peter VK5PJ on FT8 again decoded S57RR & I6WJB along with EX8MLE (Kyrgyzstan) & JA9AVA. Meanwhile Brian VK3BD decoded UN8GC at -19 & EX8MLE -8 and Andrew VK3OER decoded UN6T at -12."

"The above shows the value of weak signal modes such as JT65 & FT8 which are giving us opportunities to explore new paths even at the bottom of a sunspot cycle in mid-winter! 73 Brian VK5BC."

## In closing

Feel free to drop me a line if you have something to report. Contributions regarding club projects or proposed activities are always welcome. Just email me at [david@vk5kk.com](mailto:david@vk5kk.com) and I'll include in the column.

73

David VK5KK

## Meteor Scatter Report

Dr Kevin Johnston VK4UH

**This month: WIA Technical Forum, how bright is a meteor trail, Eta Aquariid Meteor shower report, forthcoming showers, MS activity schedules.**

Recently I was delighted to be invited to present a session on Meteor Scatter at the Technical Forum associated with the WIA AGM held on the Gold Coast in May. Both the AGM and the Technical Forum were very well attended and I thought that the SeaWorld Venue and organisation of the event were first class. The forum itself was divided into two parallel streams and covered a wide range of subject material spanning across our hobby, prepared and presented by enthusiasts in each field. The Meteor Scatter section was deliberately focused towards newcomers who may have had minimal or no previous exposure to this fascinating mode of VHF propagation, rather than being a master-class for experienced ops. I had the opportunity to outline the source and mechanisms of meteor ablation in the ionosphere and the consequent reflection and return of radio signals towards earth and unravelled some of the mysteries including the reason that meteor scatter is enhanced at dawn and in the summer months. Both random meteors and meteor showers were explained. Also covered was the history of high-speed CW and then digital modes to make use of these transient signals to make QSOs, examples of what can and can't be achieved by MS across several ham bands, the equipment and antennas required to set up a Meteor Scatter station and a view to the future of what may still be possible. I was very grateful of the generous positive feedback and insightful questions from those attending and hope that this may be reflected in more stations appearing for the first time during the activity sessions.

Preparing such a presentation was a very valuable exercise in itself and gave me the opportunity to review what I thought I already knew about VHF MS operating but created several questions I could not find the answers to. Applying some simple high school physics to known facts and then performing



back of envelope mathematics gave some interesting results.

We know for example that the vast majority of meteors responsible for MS propagation are ablated (read vaporized) at approximately 100 km above the surface of the earth at the same height as the E-layer. We know that the “flash” of the visible meteor trail is produced by a column of superheated and incandescent air molecules produced as the kinetic energy of the meteor is dissipated by friction with those rarefied air molecules in the E layer. We know that to support meteor scatter propagation the mass of the responsible meteors ranges between about 0.1 g to about 1.0 g i.e. the mass of a grain of rice up to something related to the mass of a dried pea. Further we know that to produce the ionised trails those meteors must have achieved entry velocities of between 10 - 100 km/s (Note: km/s not m/s).

From my long-unused high school physics, consider a typical meteor:

Kinetic energy  $E = \frac{1}{2}mv^2$

$\frac{1}{2} \times 1 \text{ (g)} \times 100,000^2 \text{ (m/s)} =$   
 $5,000,000,000 \text{ joules} =$   
 $5 \text{ gigajoules of kinetic energy.}$

How long does a visible meteor trail persist, and how much of that kinetic energy is delivered as light? I could not find the answer to either question. Let's assume that the vast majority of the kinetic energy is released as light for the purposes of this exercise. What about the duration of the flash? Well we know that most 2 m meteor pings are of about 100 ms or less in duration, this represents the persistence of the ionised trail as it cools down and the energy is finally dissipated. Clearly the visual flash, at vastly higher temperatures, must be much briefer. The fall in temperature is likely to be exponential so it reasonable to assume that most of the energy will be released immediately following ablation of each meteor.

If we predict that the duration of

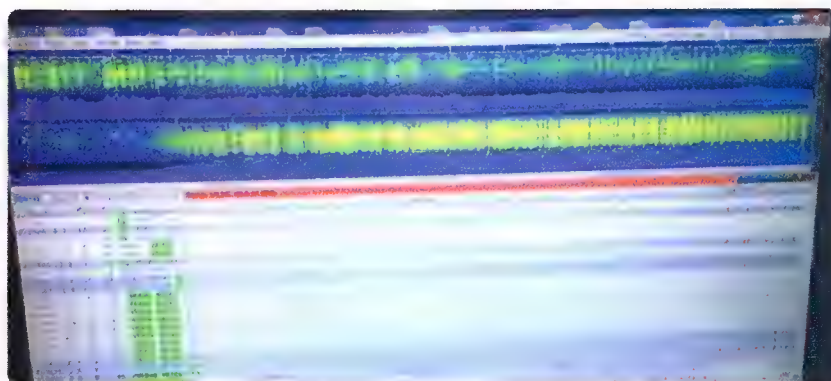


Figure 1: Single 45+ second 144 MHz meteor burn. Eta Aquariids Meteor Shower 6 May 2018.

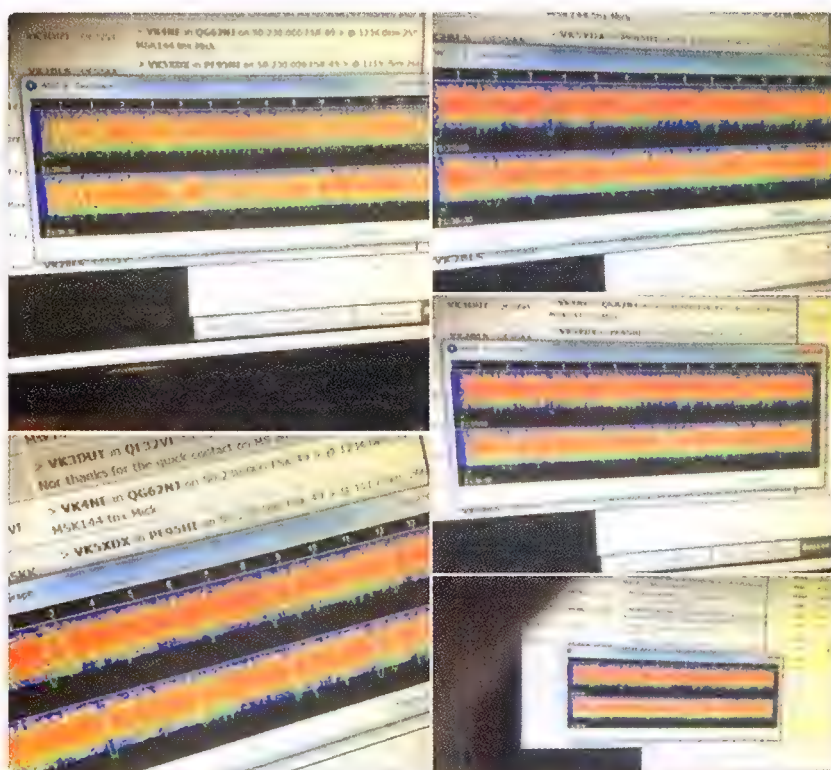


Figure 2: Composite image of 5 consecutive 2 m MSK144 sweeps during Eta Aquariids Meteor shower 6 June 2018. Burn extending for over 3.5 minutes.

the flash was around 1 ms and plug this number into the equation:

Power (watts) = energy/time

$5 \text{ gigajoules} / 0.001\text{s} = 5,000$   
**gigawatts**

So, accepting all the assumptions and extrapolations made, each visual meteor trail “flash” seen in the night sky is probably “glowing” with around 5 terawatts of power (intensity) – all from that dried pea.

## Eta Aquariids (ETA) Meteor Shower

This shower peaked around 6 May 2018 UTC and was a spectacular event this year. The shower was well times and was strongly active over the UTC weekend 4 - 5 May. It was fascinating to see all the up-to-date reports appearing on the VK-Logger and on the VK-ZL Meteor Scatter Facebook page during the shower. I would strongly encourage all operators to look at both of these



facilities for their own use. These are both closed groups and valuable even for those who have little other interest in social media. This shower occurs each year when the earth's orbit around the sun takes it through trails of debris remaining after the passage of Halley's Comet across our solar system. Eta incidentally is the name of the major star in the Constellation of Aquarius. The Zenith Hourly Rate (ZHR), an index of the predicted meteor activity, was predicted at around 70 meteors/hour but this figure has been falling over the last few years as the Halley's trail has dispersed. The shower did not disappoint and was arguably the best event so far this year. From this location in QG62 contacts were made with stations in VK1, VK2, VK3 and VK5 across both 2 m and 6 m bands. Callsigns included VK1s MT, VK2s EFM, BLS, VK3s ZL, DUT, HY and VK5's XDX were worked, most on both bands. VK4CZ also made a series

of contacts on 28 MHz MS during the shower. There were spectacular "burns" visible with signals extending across multiple reception periods. An example of a typical ETA burn from 6 May is shown in Figure 1 below. The trace shows two consecutive sweeps extending over 45 seconds at +15 dB over noise and containing signals from both VK1MT and VK3ZL. More spectacularly Figure 2 shows a composite image of another burn on 144 MHz extending across six complete 15 second MSK144 mode sweeps. This represented a single 2 m meteor burn persisting for at least 3.5 minutes at unbelievable signal strength. Certainly, the longest and loudest example I have ever seen at this QTH.

**The next major shower** on the calendar will be the Delta Aquariids (Class 1 major shower ZHR 16 meteors/hour) peaking around 30 July 2018 and then Perseids peaking around 13 August

2018 (Class 1 major shower ZHR 100 meteors/hr but unfortunately favouring northern hemisphere MS activity).

### Activity Sessions

The weekend activity sessions run on Saturday and Sunday mornings from before dawn (around 2000 UTC or earlier) until propagation fails.

**Frequencies:** 2 m 144.230 MHz, 6 m 50.230 MHz Current Preferred Mode MSK144 15 second periods.

Southerly stations running 1<sup>st</sup> period beaming North, Northerly stations running 2<sup>nd</sup> period beaming south.

Register with VK-ZL Meteor Scatter Facebook Page (Closed group of AR operators) for up to the minute advice and information.

Contributions for this column are as always welcome. Please e-mail to [vk4uh@wia.or.au](mailto:vk4uh@wia.or.au)

Kevin Johnston VK4UH  
Brisbane



## SUNFEST

Doors Open at 0900  
Saturday 8 September 2018  
(Sellers from 0700 hrs) at  
Woombye School of Arts  
Blackall Street, Woombye  
(UBD Map 66 F12)

The Sunshine Coast Amateur Radio Club's annual HAMFEST is an event for Amateur Radio operators, CB Radio users, Radio and Electronics enthusiasts, Computer bits and pieces.

New gear as well as pre-loved bits of everything on sale.  
Egg & Bacon Roll, Pies, Tea & Coffee etc. available.

Reservations for table space Contact:

Warwick Marshallsea VK4NW: mobile 0403 071 797

Email: [sunfest@vk4wis.org](mailto:sunfest@vk4wis.org)

Tables \$20 each (includes 2 persons)

Entry fee \$5 (includes door prize tickets)





# WIA Awards

Marc Hillman VK3OHM/VK3IP

In addition to the usual DX Awards for this issue, we also have the results of the annual DX leader board for 2017. The award is for the DXers who have worked the most DXCC and most band slots. The award is sponsored by the Oceanic DX Amateur Radio Group Inc. Winners in each category are highlighted in yellow. Blue is second, and Pink is third. Congratulations to all who made the top 30 list in a year of trying conditions.

Below are listed all New awards issued from 2018-04-15 to 2018-06-14, plus all updates to DXCC awards.

Go to <http://www.wia.org.au/members/wiadxawards/about/> to use the online award system.

## New awards

### DXCC Multi-band (1)

| #   | Call  | Name             | Mode    | Band | Count |
|-----|-------|------------------|---------|------|-------|
| 205 | VK5SA | Chris Livingston | Open    | 20m  | 104   |
| 206 | VK3VM | Stephen Ireland  | Open    | 20m  | 103   |
| 207 | VK3VM | Stephen Ireland  | Digital | 20m  | 101   |

### DXCC Multi-band (3)

| #   | Call  | Name         | Mode | Band      | Count |
|-----|-------|--------------|------|-----------|-------|
| 129 | VK4SN | Alan Shannon | Open | 40-20-15m | 344   |

### DXCC Multi-mode (Open)

| #   | Call   | Name          | Count |
|-----|--------|---------------|-------|
| 465 | VK4COZ | Peter Holtham | 125   |

### Grid Square

| #   | Call   | Name                   | Mode    | Band |
|-----|--------|------------------------|---------|------|
| 347 | VK2BYI | Christopher Fredericks | Phone   | HF   |
| 348 | VK6WE  | Daniel Bedo            | Open    | HF   |
| 349 | VK6WE  | Daniel Bedo            | Phone   | HF   |
| 350 | VK6WE  | Daniel Bedo            | Digital | HF   |

### IARU Worked All Continents (5)

| #  | Call  | Name          | Mode | Band   |
|----|-------|---------------|------|--------|
| 12 | VK3GA | Graham Alston |      | 5 band |

### Worked All VK Call Areas HF

| #    | Call  | Name          | Mode |
|------|-------|---------------|------|
| 2379 | VK3GA | Graham Alston | Open |

## DXCC updates

### DXCC Multi-band (1)

| #   | Call   | Name                   | Mode    | Band | Count |
|-----|--------|------------------------|---------|------|-------|
| 43  | VK7CW  | Steven Salvia          | CW      | 20m  | 276   |
| 95  | VK3VH  | Shaun Stoddart         | CW      | 20m  | 144   |
| 97  | VK6WX  | Wesley Beck            | CW      | 20m  | 136   |
| 148 | VK3GA  | Graham Alston          | CW      | 20m  | 201   |
| 168 | VK3FZ  | Roger Stafford         | CW      | 10m  | 124   |
| 199 | VK5BC  | Brian Cleland          | CW      | 30m  | 102   |
| 201 | VK3SIM | Simon Keane            | CW      | 20m  | 148   |
| 54  | VK3EW  | David McAulay          | Digital | 20m  | 202   |
| 106 | VK3SIM | Simon Keane            | Digital | 20m  | 183   |
| 149 | VK3GA  | Graham Alston          | Digital | 20m  | 178   |
| 152 | VK6DW  | Ian Cook               | Digital | 20m  | 119   |
| 164 | VK5BC  | Brian Cleland          | Digital | 20m  | 156   |
| 174 | VK5GR  | Grant Willis           | Digital | 20m  | 150   |
| 175 | VK3JLS | John Seamons           | Digital | 20m  | 131   |
| 185 | VK2BYI | Christopher Fredericks | Digital | 20m  | 167   |
| 186 | VK4CC  | Colin Clark            | Digital | 20m  | 121   |
| 190 | VK3LDB | David Burden           | Digital | 20m  | 141   |
| 191 | VK4CAG | Graeme Dowse           | Digital | 20m  | 126   |
| 17  | VK6WX  | Wesley Beck            | Open    | 20m  | 213   |
| 34  | VK3MEG | Steven Barr            | Open    | 20m  | 226   |
| 41  | VK7CW  | Steven Salvia          | Open    | 20m  | 310   |
| 51  | VK2FR  | John Sharpe            | Open    | 20m  | 282   |
| 55  | VK5BC  | Brian Cleland          | Open    | 20m  | 264   |
| 61  | VK4CC  | Colin Clark            | Open    | 20m  | 244   |
| 76  | VK3JLS | John Seamons           | Open    | 20m  | 222   |
| 90  | VK6DW  | Ian Cook               | Open    | 20m  | 171   |
| 96  | VK3VH  | Shaun Stoddart         | Open    | 20m  | 241   |
| 104 | VK3SIM | Simon Keane            | Open    | 20m  | 251   |
| 138 | VK4CAG | Graeme Dowse           | Open    | 20m  | 271   |
| 143 | VK2BYI | Christopher Fredericks | Open    | 20m  | 175   |
| 161 | VK3WE  | Rhett Donnan           | Open    | 20m  | 115   |
| 166 | VK3FZ  | Roger Stafford         | Open    | 20m  | 212   |
| 189 | VK3LDB | David Burden           | Open    | 20m  | 150   |
| 206 | VK3VM  | Stephen Ireland        | Open    | 20m  | 103   |
| 37  | VK5BC  | Brian Cleland          | Phone   | 20m  | 219   |
| 39  | VK6WX  | Wesley Beck            | Phone   | 20m  | 168   |
| 98  | VK3VH  | Shaun Stoddart         | Phone   | 20m  | 185   |
| 105 | VK3SIM | Simon Keane            | Phone   | 20m  | 187   |
| 139 | VK4CAG | Graeme Dowse           | Phone   | 20m  | 251   |
| 151 | VK6DW  | Ian Cook               | Phone   | 20m  | 118   |
| 167 | VK3FZ  | Roger Stafford         | Phone   | 20m  | 182   |
| 169 | VK3JLS | John Seamons           | Phone   | 20m  | 203   |



### DXCC Multi-band (3)

| #   | Call   | Name           | Mode    | Band      | Count |
|-----|--------|----------------|---------|-----------|-------|
| 24  | VK3EW  | David McAulay  | CW      | 30-20-17m | 899   |
| 37  | VK7CW  | Steven Salvia  | CW      | 30-20-17m | 758   |
| 70  | VK3VH  | Shaun Stoddart | CW      | 40-20-15m | 401   |
| 66  | VK3EW  | David McAulay  | Digital | 30-20-15m | 542   |
| 104 | VK5BC  | Brian Cleland  | Digital | 30-20-15m | 423   |
| 118 | VK4CAG | Graeme Dowse   | Digital | 40-20-15m | 349   |
| 121 | VK3GA  | Graham Alston  | Digital | 40-20-17m | 408   |
| 125 | VK3SIM | Simon Keane    | Digital | 40-20-15m | 451   |
| 30  | VK3SX  | Bob Robinson   | Open    | 20-15-10m | 703   |
| 36  | VK7CW  | Steven Salvia  | Open    | 30-20-17m | 799   |
| 48  | VK5BC  | Brian Cleland  | Open    | 20-17-15m | 723   |
| 65  | VK3VH  | Shaun Stoddart | Open    | 40-20-15m | 617   |
| 67  | VK3SIM | Simon Keane    | Open    | 40-20-15m | 619   |
| 69  | VK3MEG | Steven Barr    | Open    | 20-15-10m | 550   |
| 73  | VK3GA  | Graham Alston  | Open    | 20-17-15m | 702   |
| 91  | VK4CAG | Graeme Dowse   | Open    | 20-17-15m | 719   |
| 97  | VK6DW  | Ian Cook       | Open    | 40-20-15m | 434   |
| 102 | VK3FZ  | Roger Stafford | Open    | 20-15-10m | 600   |
| 112 | VK6WX  | Wesley Beck    | Open    | 40-20-15m | 478   |
| 119 | VK3JLS | John Seamons   | Open    | 20-17-15m | 434   |
| 122 | VK4CC  | Colin Clark    | Open    | 20-17-15m | 515   |
| 23  | VK3EW  | David McAulay  | Phone   | 40-20-15m | 985   |
| 31  | VK3SX  | Bob Robinson   | Phone   | 20-15-10m | 695   |
| 49  | VK5BC  | Brian Cleland  | Phone   | 20-15-10m | 607   |
| 68  | VK3MEG | Steven Barr    | Phone   | 20-15-10m | 501   |
| 72  | VK7CW  | Steven Salvia  | Phone   | 20-15-10m | 504   |
| 92  | VK4CAG | Graeme Dowse   | Phone   | 20-17-15m | 606   |
| 103 | VK3FZ  | Roger Stafford | Phone   | 20-15-10m | 478   |
| 124 | VK3SIM | Simon Keane    | Phone   | 20-15-10m | 395   |

### DXCC Multi-band (5)

| #  | Call   | Name           | Mode    | Band            | Count |
|----|--------|----------------|---------|-----------------|-------|
| 21 | VK3EW  | David McAulay  | CW      | 40-30-20-17-15m | 1396  |
| 35 | VK7CW  | Steven Salvia  | CW      | 40-30-20-17-15m | 1159  |
| 76 | VK5BC  | Brian Cleland  | Digital | 40-30-20-17-15m | 682   |
| 79 | VK3EW  | David McAulay  | Digital | 40-30-20-17-15m | 816   |
| 88 | VK4CAG | Graeme Dowse   | Digital | 40-30-20-17-15m | 565   |
| 89 | VK3SIM | Simon Keane    | Digital | 40-30-20-17-15m | 670   |
| 31 | VK5BC  | Brian Cleland  | Open    | 40-20-17-15-10m | 1150  |
| 34 | VK7CW  | Steven Salvia  | Open    | 40-30-20-17-15m | 1224  |
| 42 | VK4CAG | Graeme Dowse   | Open    | 20-17-15-12-10m | 1049  |
| 47 | VK3SX  | Bob Robinson   | Open    | 40-20-17-15-10m | 988   |
| 48 | VK3SIM | Simon Keane    | Open    | 40-30-20-17-15m | 940   |
| 67 | VK3VH  | Shaun Stoddart | Open    | 40-30-20-15-10m | 887   |
| 72 | VK3FZ  | Roger Stafford | Open    | 30-20-15-12-10m | 887   |
| 73 | VK3GA  | Graham Alston  | Open    | 40-30-20-17-15m | 1031  |
| 85 | VK6DW  | Ian Cook       | Open    | 40-20-17-15-10m | 641   |
| 87 | VK2ZQ  | Michael Ramsay | Open    | 40-30-20-15-10m | 788   |
| 2  | VK3EW  | David McAulay  | Phone   | 40-20-17-15-10m | 1606  |
| 33 | VK5BC  | Brian Cleland  | Phone   | 20-17-15-12-10m | 946   |
| 41 | VK4CAG | Graeme Dowse   | Phone   | 20-17-15-12-10m | 894   |
| 52 | VK3SX  | Bob Robinson   | Phone   | 40-20-17-15-10m | 968   |

### DXCC Multi-band (7)

| #  | Call   | Name           | Mode  | Band                  | Count |
|----|--------|----------------|-------|-----------------------|-------|
| 10 | VK3EW  | David McAulay  | CW    | 80-40-30-20-17-15-12m | 1797  |
| 14 | VK7CW  | Steven Salvia  | CW    | 40-30-20-17-15-12-10m | 1516  |
| 15 | VK7CW  | Steven Salvia  | Open  | 40-30-20-17-15-12-10m | 1604  |
| 24 | VK5BC  | Brian Cleland  | Open  | 40-30-20-17-15-12-10m | 1544  |
| 35 | VK3FZ  | Roger Stafford | Open  | 40-30-20-17-15-12-10m | 1139  |
| 36 | VK4CAG | Graeme Dowse   | Open  | 40-30-20-17-15-12-10m | 1353  |
| 41 | VK3SIM | Simon Keane    | Open  | 40-30-20-17-15-12-10m | 1187  |
| 8  | VK3EW  | David McAulay  | Phone | 80-40-20-17-15-12-10m | 2179  |

### DXCC Multi-band (9)

| #  | Call  | Name          | Mode | Band                         | Count |
|----|-------|---------------|------|------------------------------|-------|
| 12 | VK3EW | David McAulay | CW   | 160-80-40-30-20-17-15-12-10m | 2120  |
| 1  | VK3EW | David McAulay | Open | 160-80-40-30-20-17-15-12-10m | 2788  |

### DXCC Multi-mode (CW)

| #   | Call   | Name           | Count |
|-----|--------|----------------|-------|
| 211 | VK7CW  | Steven Salvia  | 304   |
| 222 | VK5BC  | Brian Cleland  | 189   |
| 223 | VK6WX  | Wesley Beck    | 204   |
| 225 | VK4CC  | Colin Clark    | 186   |
| 231 | VK3VH  | Shaun Stoddart | 267   |
| 233 | VK3SIM | Simon Keane    | 218   |
| 234 | VK3MEG | Steven Barr    | 150   |
| 240 | VK3GA  | Graham Alston  | 251   |
| 245 | VK4CAG | Graeme Dowse   | 160   |
| 247 | VK2FR  | John Sharpe    | 148   |
| 249 | VK3FZ  | Roger Stafford | 226   |

### DXCC Multi-mode (Digital)

| #  | Call   | Name                   | Count |
|----|--------|------------------------|-------|
| 19 | VK2CA  | Allan Meredith         | 253   |
| 20 | VK3EW  | David McAulay          | 294   |
| 29 | VK5BC  | Brian Cleland          | 224   |
| 33 | VK7CW  | Steven Salvia          | 145   |
| 40 | VK3SIM | Simon Keane            | 220   |
| 48 | VK2ZQ  | Michael Ramsay         | 155   |
| 56 | VK2BYI | Christopher Fredericks | 175   |
| 57 | VK3VH  | Shaun Stoddart         | 116   |
| 61 | VK4CC  | Colin Clark            | 155   |
| 65 | VK3FZ  | Roger Stafford         | 140   |
| 66 | VK3JLS | John Seamons           | 140   |
| 67 | VK4CAG | Graeme Dowse           | 187   |
| 71 | VK3LDB | David Burden           | 175   |
| 72 | VK3VM  | Stephen Ireland        | 131   |



## New Foundation Manual

Available now!

[http://www.wia.org.au/members/bookshop/page\\_data.php?id=113](http://www.wia.org.au/members/bookshop/page_data.php?id=113)



## DXCC Multi-mode (Open)

| #   | Call   | Name                   | Count |
|-----|--------|------------------------|-------|
| 350 | VK4CAG | Graeme Dowse           | 326   |
| 363 | VK3OHM | Marc Hillman           | 250   |
| 370 | VK3MEG | Steven Barr            | 266   |
| 376 | VK6WX  | Wesley Beck            | 258   |
| 388 | VK5BC  | Brian Cleland          | 303   |
| 393 | VK7CW  | Steven Salvia          | 317   |
| 395 | VK2FR  | John Sharpe            | 338   |
| 415 | VK3VH  | Shaun Stoddart         | 304   |
| 416 | VK2QN  | John Watt              | 111   |
| 423 | VK3SIM | Simon Keane            | 288   |
| 440 | VK2BYI | Christopher Fredericks | 184   |
| 444 | VK5GR  | Grant Willis           | 210   |
| 451 | VK3FZ  | Roger Stafford         | 309   |
| 452 | VK5SA  | Chris Levingston       | 119   |
| 458 | VK3LDB | David Burden           | 181   |
| 459 | VK3VM  | Stephen Ireland        | 132   |

## DXCC Multi-mode (Phone)

| #   | Call   | Name           | Count |
|-----|--------|----------------|-------|
| 556 | VK4CAG | Graeme Dowse   | 320   |
| 563 | VK2FR  | John Sharpe    | 337   |
| 573 | VK6WX  | Wesley Beck    | 221   |
| 575 | VK3MEG | Steven Barr    | 251   |
| 582 | VK5BC  | Brian Cleland  | 288   |
| 597 | VK3VH  | Shaun Stoddart | 241   |
| 598 | VK3GA  | Graham Alston  | 276   |
| 601 | VK3SIM | Simon Keane    | 229   |
| 617 | VK3FZ  | Roger Stafford | 269   |



Shepparton and District Amateur Radio Club (SADARC)



## Hamfest/Comms day Sunday 9 September

SADARC is holding its famous annual Hamfest/Comms day at St Augustine's Hall, Orr Street Shepparton.

**Vic Roads Shepparton map 673 Ref P8**

Call in on Mt Wombat Repeater 146.650 MHz.

This is our usual venue. The doors open for traders at 8:00 am and 10:00 am for the public.

We are retaining our very reasonable \$5 entry fee and entry tickets can be purchased before 10:00 am.

There will be quality food at good prices on site, with seating so you can both eat and talk in comfort. There will be a raffle and door prizes for lucky participants. The usual commercial vendors will be there plus many other tables of pre-loved equipment, with around 30 tables in total.

Year: 2017 ↕

## All grades DX Leader Board for 2017 (Top 30)

| Call   | Name                   | DXCC | Open | Phone | CW  | Digital |
|--------|------------------------|------|------|-------|-----|---------|
| VK3GA  | Graham Alston          | 265  | 723  | 131   | 287 | 448     |
| VK3SIM | Simon Keane            | 190  | 617  | 56    | 162 | 544     |
| VK5GR  | Grant Willis           | 184  | 586  | 108   | 194 | 488     |
| VK4CAG | Graeme Dowse           | 177  | 720  | 19    | 47  | 682     |
| VK5BC  | Brian Cleland          | 172  | 649  | 102   | 34  | 595     |
| VK3EW  | David McAulay          | 169  | 488  | 78    | 153 | 354     |
| VK9VKL | Clifford Tindall       | 168  | 433  | 216   | 0   | 382     |
| VK3LDB | David Burden           | 163  | 336  | 39    | 8   | 322     |
| VK7CW  | Steven Salvia          | 162  | 475  | 30    | 460 | 34      |
| VK3JLS | John Seamons           | 160  | 310  | 103   | 6   | 263     |
| VK3AWG | Christopher Bellmont   | 160  | 340  | 59    | 57  | 262     |
| VK3VT  | Greg Williams          | 148  | 296  | 18    | 83  | 238     |
| VK4CC  | Colin Clark            | 128  | 269  | 35    | 10  | 247     |
| VK4KEE | Robert Hollis          | 125  | 291  | 11    | 8   | 272     |
| VK6DW  | Ian Cook               | 119  | 396  | 88    | 86  | 342     |
| VK5ZK  | Garry Herden           | 118  | 272  | 6     | 8   | 263     |
| VK2BYI | Christopher Fredericks | 110  | 146  | 0     | 0   | 146     |
| VK3VM  | Stephen Ireland        | 110  | 269  | 3     | 0   | 269     |
| VK2ZQ  | Michael Ramsay         | 100  | 178  | 23    | 2   | 164     |
| VK3EY  | Robert Puise           | 98   | 233  | 70    | 5   | 195     |
| VK6IR  | Stephen Chamberlain    | 97   | 235  | 0     | 3   | 232     |
| VK6WX  | Wesley Beck            | 92   | 157  | 67    | 90  | 26      |
| VK4BRT | Benjamin Beresford     | 91   | 164  | 34    | 0   | 154     |
| VK2RT  | Bruce Beresford        | 86   | 130  | 47    | 0   | 113     |
| VK3MEG | Steven Barr            | 77   | 134  | 69    | 52  | 47      |
| VK6BMW | Richard Grocott        | 77   | 183  | 4     | 9   | 180     |
| VK3FZ  | Roger Stafford         | 70   | 147  | 4     | 4   | 144     |
| VK3JL  | David Rolfe            | 69   | 150  | 13    | 10  | 144     |
| VK5DG  | David Giles            | 68   | 116  | 2     | 1   | 114     |
| VK3GQ  | Peter Carew            | 63   | 127  | 1     | 0   | 126     |

## Foundation DX Leader Board for 2017 (Top 10)

No qualifying QSO





# ALARA

Jenny Wardrop VK3WQ

## Where have all the ladies gone?

This is the cry often be-moaned by OMs and YLs alike during the ALARA Contest weekend. We are always delighted to have the OMs support us in our Contest, in fact, if it wasn't for the OMs, the contest would possibly fold. I know that some YLs don't like contests, and most of us can't put aside two full days on the air, but most can find time for a few hours over that weekend. So come on ladies, let's support the contest this year and give the OMs a real surprise at the number of ladies on the band!

Below are this year's contest rules from our Contest Manager, Marilyn VK5DMS.

## 38th ALARA Contest

Australian Ladies Amateur Radio Association Inc. A0031101B

**NOTE: Contest is always on the last FULL weekend of August: (27/28 August 2018)**

**Eligibility:** All licensed operators throughout the world are invited to participate.

**Object:** Participation: YLs work everyone, OMs work YLs only.

**Contest:** Combined phone and CW run over 24 hours.

**Starts: Saturday 25 August 2018 at 0600 hours UTC**

**Ends: Sunday 26 August 2018 at 0559 hours UTC**

**Suggested frequencies:** All HF Bands to be used except 160 m & WARC Bands.

**Contacts made on EchoLink will also be accepted.**

**Operation: Single operator only (1 operator per call sign)**

NB: If YL is operating as a 2nd operator, her husband/partner **CANNOT** participate in the contest.

Every individual phone or CW contact may be counted. There must be an interval of greater than 1 hour between contacts with any one station on any one band and in the same mode. All contacts must be made in accordance with operator and station licence regulations.

**Procedure:** Phone: call "CQ ALARA CONTEST"

CW: YLs call "CQ TEST ALARA"  
OMs call "CQ YL"

**Exchanges: ALARA member:** RS or RST, serial no. starting at 001, ALARA member, name.

**YL non-member, OM:** RS or RST, serial no. starting at 001, name and whether YL or OM.

**OMs work YLs only.**

**Scoring: Phone:** 5 points for ALARA member logged  
4 points for YL non-member logged  
3 points for OM logged

**CW: All contacts made on CW count for double points**

**OM:** 5 points for ALARA member logged

4 points for YL non-member logged  
**LOGS:** Single log entry. Logs must show date, UTC time, band, mode, call sign worked, report and serial number sent, report and serial number received, name of operator of station worked and points claimed.

Please note in mode if contact is on Echolink.

Paper logs and electronic logs both welcome.

**LOGS MUST BE SIGNED.** Logs also to show full name, call sign and address of operator, and show final score (points claimed).

Logs must be legible. No logs will be returned. Decision of the Contest Manager will be final, and no correspondence will be entered into.

Logs must be received by the Contest Manager by: **30 September 2018.**

**CONTEST MANAGER:** Mrs Marilyn Syme VK5DMS, 14/142 Marian Rd, Glynde SA 5070 AUSTRALIA  
or: [alaracontest@wia.org.au](mailto:alaracontest@wia.org.au)

**Certificates** will be awarded for the following:

- Top score YL overall
- Top score YL phone only
- Top score YL Echolink
- Top score Australian YL CW
- Top score DX YL CW
- Top score DX YL
- Top score ALARA member in each country & VK call area
- Top score OM in each continent & VK call area
- Top score VK YL Foundation Licence holder

**A trophy** will be awarded for the following:

- Top scoring Australian YL
- Top scoring Foundation Licence ALARA member

The top scoring VK non-ALARA member will be awarded 1 year's subscription membership to ALARA.

## Bloody Nora Part 2

This month we continue with the second half of Lyn VK4SWE's article on what you do if you live on a small island 'many miles away from anywhere' and a cyclone threatens!

The story continues with the pre-storm antenna activities:

Our Coxswain Travis was up the ladder unbolting the wires from the centre post, then passing them down to me. I put each coiled wire into a plastic bag marking with a texta pen: "1<sup>st</sup> from centre, 6 m"... "2<sup>nd</sup> from centre 10 m..." etc. If I had to do this again, I would also mark which spreader came from under which bolt (just to match the paint





Photo 1: Travis disconnecting wires from centre post (Photo Lyn Battle VK4SWE).

more secure and less windage upright than tilted over and “hanging” off the pivot pin on the support mast. Then I was able to stop worrying about the antenna and get to work packing the good radio gear into a secure trunk in case we did get the forecast 250 km/h winds and lose the roof off the house to rain damage!

Next task was to make sure that my portable setup was working, as we expected to lose all forms of communication with the outside world. We have a fixed-base satellite phone but that building could get damaged and our satellite internet dish would probably be one of the first things to blow away and does not work in heavy cloud cover. So I got out the new Bush Comm Highlander multi-tap whip antenna that I used on our holiday boat trip; unfortunately I had not brought the sand spike I use for trips ashore but it didn't take Tex long to weld a metal plate onto a piece of star picket for me. Col VK4CC suggested handy office ‘Bulldog Clips’ to attach the metal

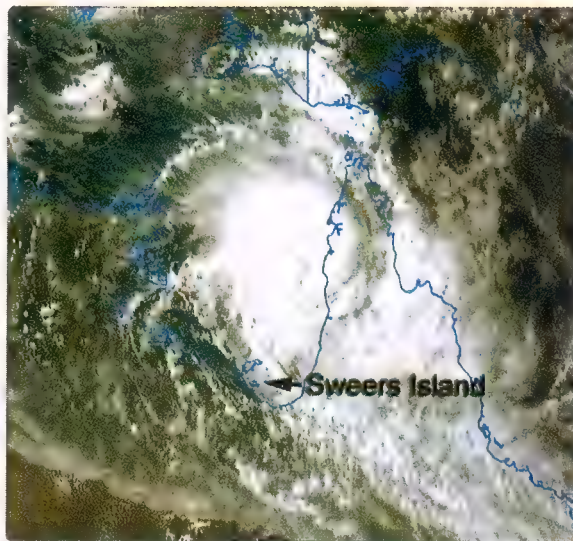


Photo 3: map from the Bureau of Meteorology. (Reproduced by permission of Bureau of Meteorology, © 2018 Commonwealth of Australia.)

marks) and also mark each wire with tape or whiteout where it went through the tips of each spreader (to know how tightly to “re-string it”) but the whole operation went smoothly and we had the antenna dismantled in a very short time, safely stacked in the shack, and the tower tilted back up snug against the guys and support beams. I rang Harold VK4ANR, who built my tower setup, to confirm that it would be

measuring tape radials and I set the spike up just outside the shack window, wrapped a towel round the coax connection as there were some scud showers around, and ran a coax lead through the shack window to the trusty old Icom IC-718. We ran some tests then I took the antenna, coax and tapes inside, but left the spike in the ground overnight. Next day (Friday) I arranged with some of the regulars on the ANZA DX Net for a daily sked if the weather was OK to go out and set up the antenna. We arranged a short code system with the guys listening for “ALL OK, ALL OK!”

The weather deteriorated throughout Friday and Saturday as the Category 4 cyclone rapidly approached – satellite imagery showing the extent of the cloud cover and the “eye”.

We continued to pack away as much as we could in the office and house, backup hard-drives and even the office laptop went into a trunk! Tex had a builder and electrician on standby and many friends sent offers to come over Easter to help with repairs/rebuilding. On Saturday night, the system moved closer to the western side of Cape York Peninsula. Although it was expected to bounce back out to the Gulf, it

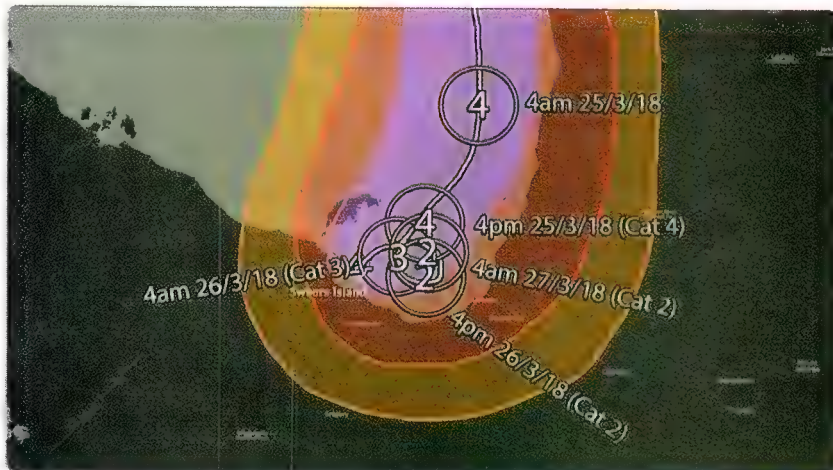


Photo 2: map from the Bureau of Meteorology. (Reproduced by permission of Bureau of Meteorology, © 2018 Commonwealth of Australia.)



crossed the coast during the night as Category 3 Cyclone, near the Aboriginal township of Pormpuraaw, about half-way between Weipa and Karumba. It remained over land all through Sunday and lost a lot of its intensity, steadily dropping to a Tropical Low but expected to move back out over the Gulf and reform on the Thursday!

Our nerves were shot with a week of this meandering and we decided not to put the boats back into the water nor the tower up until "Bloody Nora" was well and truly gone! I was able to keep my daily skeds with the ANZA guys with the little vertical, which only took minutes to bolt onto the spike, although we never did lose our phones or internet, as we were outside the circle of damaging winds and heavy rain. Our highest recorded wind gust was 24 knots and we only got 20 mm rain. But it was so reassuring to hear their voices on the radio and know that if the worst had happened, we would have had a means of communication with the outside world.

During the week, we were kept busy putting everything back in place for the tourist season. The Low passed just north of us, giving us two days of blustery rain squalls but no problems at all. I gave the shack a good "spring clean" and put the equipment back out on the bench. On Monday April 2, Travis helped me to put the beam back together. We tilted the tower and Travis went up the ladder again, wriggling the spreaders into the U-bolts and then threading the wires around them while I went back and forth to the shack to rotate the antenna so we could reach them. We started about 8 am and finished just in time for lunch! We took our time, and had no problems, everything fitted back the way it should have, and the shiny new 20 m wire went on smoothly too, with new "sleeves" where it goes through the P-clips, to protect it from the perching birds. We tested after

lunch and SWR was low on all the bands – Yay! I was back on the air that afternoon as Net Control for the ANZA DX Net!

It was great to hear fellow ALARA member Shirley VK5YL and our regular JAL Mee JN2OWE – Mondays are "Ladies Day" on ANZA hih!

So we were extremely lucky to be spared from the cyclone, and extremely lucky to have the friendship and support of fellow hams in times like these.

33 Lyn VK4SWE  
Sweers Island  
Gulf of Carpentaria

### VK3 Report from Jean VK3VIP

On Sunday the 6<sup>th</sup> May, some of the VK3 ALARA members tried to do something different for our ALARA lunch; we went to the Gisborne market. Unfortunately, although we arrived early, we were unable to find parking space. We drove around and around and eventually gave up and went to buy some lunch then headed to the home of Pam VK3NE and Graeme VK3NE for lunch and the afternoon's entertainment.

Graeme VK3NE entertained us with a mechanical organ which Pam had made. It was a lovely day so we sat outside. There were about fourteen people attending, and we would like to say a big thanks to Pam and Graeme for opening up their home to us.

On Saturday May 12 we headed to the Moorabbin Hamfest, which was about fifteen minutes from our home. Kaye VK3FKDW and Denis VK3BGS were on the door to sell tickets



Photo 6: (Left to Right) Pam VK3NE, Susan VK3FZZY, Margaret VK3FMAB, Kaye VK3FKDW, Jean's Mum Elsie, Jean VK3VIP, Robyn VK3WX and Cheryl VK3FCYL.

to let visitors into the hall. ALARA had a table and did very well with a subscription renewal and the sale of some pens and a couple of badges.

### And from Jen VK3WQ

I was pleased to be able to represent ALARA over the weekend of the WIA AGM and Convention at the Gold Coast. Besides hearing about possible future directions for amateur radio and the WIA, we had many opportunities to talk to the Board members, who explained and clarified a few issues.

The only ALARA members that I identified, and had a good chance to speak to, were Liz VK2XSE and Catherine VK4GH. Unfortunately I missed meeting Paula VK8ZI, who we speak to regularly on the ALARA Net, on the first Monday of the month, on EchoLink.



Photo 7: ALARA members at the WIA AGM on the Gold Coast: L to R: Paula VK8ZI, Liz VK2XSE and Catherine VK4GH. (Photo Liz Billiau VK2XSE.)





## VK2news

Tim Mills VK2ZTM  
e vk2ztm@wia.org.au

### WIA AGM 2019

Sydney has been nominated for the 2019 WIA AGM and Conference venue. The date has yet to be announced but is likely to be in May. Next year, 2019, is also the Centenary of the formation of the Waverley ARS and they, in conjunction with other Sydney and surrounding region clubs, are to undertake the AGM arrangements.

### Hornsby & District Amateur Radio Group

In the last issue of *AR*, it was advised that the Hornsby & District ARC, in conjunction with the Ku-ring-gai Historical Society, will be celebrating the Centenary of the reception of the first direct wireless message received from Great Britain in Australia. The celebrations will be held outside the Fisk Wahroonga home on late Saturday morning of 22 September 2018. There will be a special event call sign VK100MARCONI during the period of the centenary. The original transmission was made at pre-arranged intervals on a frequency below 20 kHz. On the day that reception was achieved it has been determined that there was a burst of exceptional propagation. This was a one way transmission. Confirmation was cabled back to the UK. The Centenary is still some weeks away so details closer to the event will be given via the VK2WI News bulletins.

### Hunter Radio Group

The Hunter Radio Group has a new meeting place following the sale of the previous NBN TV meeting location. The new location is at the Adamstown Bowling Club, in the Belmore Function Room. The club is located at 504 Glebe Road, Adamstown in Newcastle.

### SK Bill Hall VK2XT

In June both the Hunter Radio Group and ARNSW lost their long-time member when Bill Hall VK2XT became a Silent Key. Bill reached the age of 105. He was a Life Member of ARNSW and the WIA. Bill was originally licensed as VK2BH but this was wanted by the commercial radio station in Broken Hill. He chose VK2XT in its place.

### Oxley Region Amateur Radio Group

The Oxley Region ARC conducted their annual two day field day over the June long weekend in the hall of the Wauchope High School. An alternative venue this year as the usual Surf club at Lighthouse Beach was being renovated. There were 103 registrations recorded, including strong contingents from Newcastle, Sydney and the Far North Coast. The disposals were very popular with lots of bargains for all. The three separate HF, VHF and UHF digital data and voice on-air demonstrations created a lot of interest. Peter VK2EVB from Coffs Harbour set up his 3D printer as part of his display, which included his 3D printed case for his BITX40 QRP HF SSB transceiver. The fox hunting was keenly contested with Gerard VK2IO the Foxhunt Champion and Chris VK2YMW the runner up. The trade displays were popular. The kitchen volunteers were kept busy throughout the weekend. A new record was set for the consumption of bacon and egg sandwiches this year. The Field Day Dinner was particularly enjoyable. While many found the Wauchope venue was good, it is most likely the 2019 Field Day will be back at the surf club – further renovations permitting. The ORARC AGM is scheduled for the first Saturday in August.

### Licensing Exams

Every few months US licence exams are available in VK2. They are conducted by a Sydney based ARRL Volunteer Examiner team. The most recent exam was conducted in early July. The team details can be found on their new web site [veexams.com](http://veexams.com) or contact Julian VK2YJS.

### ARNSW

ARNSW conducted a Talk Fest in June on the topic of antennas with six presenters giving their thoughts on the topic. There were some 55 in attendance from both Sydney and surrounding regions. No word yet on the next gathering but there is talk of one before the end of the year. As always, keep across the Sunday VK2WI News. There is the next ARNSW Trash & Treasure Sunday on 29 July. There is an ARNSW Foundation and assessment weekend scheduled for 15 and 16 September. The ARNSW committee for the current year has a couple of changes in the administration roles. Mathew VK2YAP remains President. The Vice Presidents are Tim VK2ZTM and Al VK2OK, Secretary is Eric VK2VE and Treasurer is Ray VK2ASE. Other committee positions are unchanged.

### Waverly Amateur Radio Club

Waverley ARS has just had their annual auction. They have a Foundation and assessment weekend scheduled for September 15 and 16. Manly-Warringah RS are trialling a DMR repeater on 438.4 MHz with a -5.4 MHz offset and they seek coverage reports.

### Illawarra Amateur Radio Service

The Illawarra ARS is celebrating their 70th Anniversary this year and have a special event call sign V12AMW70. They were formed on 12 June 1948. They have just held a field day weekend at Burrinjuck Dam which is near Yass. Part of the weekend was to launch a high altitude balloon with APRS transmissions on 10 metres. For Amateur Radio licence training in the Illawarra contact Ted at [vk2ara@wia.org.au](mailto:vk2ara@wia.org.au)

73

Tim VK2ZTM.



# VK3 news Amateur Radio Victoria

Tony Hambling VK3XV

e [arv@amateurradio.com.au](mailto:arv@amateurradio.com.au)

w [www.amateurradio.com.au](http://www.amateurradio.com.au)

## New ARV Councillor:

It is with pleasure that the Council would like to inform members that Rob Whitmore VK3MQ, a long standing office volunteer, has accepted an offer to fill a Council vacancy.

Rob has been duly appointed and this was announced at our recent AGM.

## VK3 Repeater Updates

### VK3RHO

ARV volunteers recently added a new APRS beacon to the Victorian network. VK3RHO is now running on the summit of Mt Hotham and is fully operational in time for the coming winter snow season. This will be a valuable addition to the network expanding the coverage well into the high country.

**VK3RBO** the Bendigo City repeater has an experimental AllStar node running on it. This is in addition to the IRLP node that has been operational for some years. The node information can be viewed at <http://node44099.ddns.net/> Frequency 438.025 MHz -5 MHz offset.

**VK3RCE** in Bendigo has been upgraded to MMDVM which allows multiple digital modes to operate through the one gateway. Currently both D-STAR and DMR are operational and if interest is shown, further modes will be activated. Frequency 438.9125 MHz 0 MHz offset.

**VK3RTV** digital ATV has run a successful test from the Surrey Hills site and is now waiting building refurbishment and licence updates before being put into regular operation. Further details below.



The equipment rack for VK3RTV Surrey Hills.

**VK3RGL** Mt Anakie has joined the Victorian DMR network with the recent addition of a Motorola DMR repeater. Frequency is 439.500 -5 MHz offset.

Antenna work has been completed at Mt Stanley and we expect this repeater to be operational in the near future. This has been a long process with the complete rebuilding of the site after the disastrous Black Saturday bushfires. With the assistance of Government grants, over \$100,000 has been spent on a total site refurbishment.

## VK3RTV DATV Repeater update

The Melbourne DATV Repeater VK3RTV closed earlier this year as the Olinda site was decommissioned. A search around Mount Dandenong found that a number of smaller sites had suffered a similar fate and that the only available sites left were large commercial sites with the associated large annual fees.

**Amateur Radio Victoria** was negotiating for a metropolitan site in Mount Waverley and initial planning was in place to run some experiments from there. A second site has now been made available for testing at Telstra Surrey Hills and it was decided by the repeater team of Peter VK3BFG and Phil VK3GMZ to try this out first, as it was located at the highest point in the metropolitan area. It is also line of sight over a few kilometres to Mount Waverley. A vertical dipole array was salvaged from Olinda which swept quite nicely at 70 cm.

It was decided to use this as the new requirement for coverage was omnidirectional. A 23 cm panel antenna from Olinda was also arranged in a triangular orientation with one panel facing east. This would not be omnidirectional but it was recognised that the path to the far-east would be challenging. An initial short on air test resulted in problems with another local service, so it was back to the planning table.

The original ATV Band Plan was based on the old analogue technology where an FM sub-carrier would be placed at 449.75 MHz with the video carrier at 444.25



MHz. This fitted very nicely into the top end of the 70 cm amateur allocation. With the advent of digital television, a DVB-T signal had significant components at 450 MHz and hence with non-linearity in amplifiers, low level third order products would exist outside the amateur band. This was not a problem at Olinda but not so in a metropolitan environment. After experimentation with various cavities it was decided to source a commercial DVB-T filter for metropolitan operations. This turned out to be a difficult task with most filters either far too large or would not tune for a 7 MHz bandwidth in the 440 - 450 MHz frequency range. Phil eventually found a company in Italy that were able to re-tune their 250 watt model to exactly fit

our requirements. The cost of the filter landed was close to \$1000.00 AU and was funded by Amateur Radio Victoria and the Eastern and Mountain Districts Radio Club.

The WIA ATV Band plan for 70 cm has been modified in the light of these first experiments and the centre frequency is now 445.5 MHz with the end of the ATV segment 449 MHz. 449 - 450 MHz is now available for repeater links, but also provides a guard band for the ATV segment.

Because of the ease of access to antennas at Surrey Hills, it was decided to run a pre-amplifier at the antenna and also one at the receiver. This resulted in a very high noise floor at the receiver, but made the difference between success and failure. Only inputs using DVB-S

were used and it is suspected that analogue FM would not be successful under this regime. We also only ran one channel of the two channel multiplexed signal.

We conducted a test over a week with most Melbourne ATV stations participating. The results were very encouraging. With the Mount Waverly site to be considered as a secondary input; further planning is now being undertaken.

### Keith Roget Memorial National Parks activation weekend 2018

November 9-12 2018 is the next KRMNPA activation weekend. Put these dates in your diary now. For further info contact [awards@amateurradio.com.au](mailto:awards@amateurradio.com.au)



## GGREC HAMFEST

### Saturday 4 August 2018

Gippsland Gate Radio & Electronics Club invites you to our annual Hamfest at the CRANBOURNE PUBLIC HALL, located on the corner of Clarendon and High St. Melway Ref: 133 K4.

See our web page at [ggrec.org.au/hamfest.html](http://ggrec.org.au/hamfest.html) for full details.



**40 tables of new and used Electrical, Electronic and Amateur Radio equipment.**

- All tables are under cover.
- Tea, Coffee and a selection of hot & cold food will be available during the event.
- Great Door Prizes will be drawn at approx. 1:00 pm.
- Doors open to sellers at about 8.30 am and the Public at 10 am.
- Public entry fee is \$7.00 which includes one free door prize ticket.
- Tables are available for \$22.00 each and must be booked in advance. Your booking will include entry for 2 sellers and door prize ticket per person. Tables are allocated on a first in basis, so don't delay your booking.

Anyone wishing to reserve a table position should contact the Club soon, as tables go quickly.

Email to [hamfest@ggrec.org.au](mailto:hamfest@ggrec.org.au)





## VK7news

Justin Giles-Clark VK7TW

e [vk7tw@wia.org.au](mailto:vk7tw@wia.org.au)

w <https://groups.yahoo.com/neo/groups/vk7regionalnews/info>

### VK7 WWFF activation weekend

During the weekend of May 12-13 Jon VK7JON organised a VK7 event to promote both portable operations and the World Wide Flora and Fauna (WWFF) program in Tasmania. This program encourages operating portable whilst generating attention to protected park and nature areas. You can find out more about the WWFF program in Australia from its website at [www.wwffaustalia.com](http://www.wwffaustalia.com)

The event was publicised via the Sunday broadcast over a few weeks and, despite the deluge that hit Hobart and much of the state earlier that week, we were thrilled to have the following operators participate.

- Jon VK7JON and Helen VK7FOLK at the West Point State Reserve on the west coast and the Pieman State Reserve near Corinna.
- Angela VK7FAMP and Tony VK7LTD at the Ida Bay State Reserve in the south east.
- Peter VK7PD and Al VK7AN at Trevallyn Nature Recreation Area near Launceston.
- Andrew VK7DW activated Narawntapu National Park on the North Coast.
- Linda VK7QP and Martin VK7GN at the Tessellated Pavement State Park, on the Tasman Peninsula.
- Eric VK7EV activated the Kimberley Springs State Reserve, to the south of Devonport.



Photo 1: Angela VK7FAMP on the mic at the Ida Bay State Reserve (Photo courtesy of Tony VK7LTD).

Getting started in the WWFF program is really easy and most operators use little more than an inverted vee linked dipole which provides quick and easy portability between bands. All you need is a 7 metre fishing/squid pole to gain some height and you are ready to operate. So why not give it a go? To find out more, visit the WWFF Australia website or send Jon VK7JON who is the VK7 state representative for the program an email at [vk7ff@vk7jon.com](mailto:vk7ff@vk7jon.com).

Thanks to Jon, VK7JON for that summary of the VK7 WWFF Activation weekend.

### North West Tas. Radio & TV Group (NWTR&TVG)

<http://www.vk7ax.id.au/atvgroup/>

Recently there was a huge session of Foundation Training and Assessment where 12 people consisting of Venturer Scouts, Scouts, two juniors (aged 12 & 13) and three adults including Scout Leaders all passed their assessments for the Foundation Licence. In addition, Helen VK7FOLK sat and passed her 'Advanced' Regulations and is looking to sit her Advanced theory very soon.

NWTR&TVG thank the following people who made this possible: David VK7DC, Keith VK7KW, Peter VK7PD, Tony VK7AX and Eric VK7EK. David VK7DC led the training on Saturday and did a great job with his presentation and all appreciated his effort.

A few weeks later there was a fantastic thank you letter from 11 year old Georgie VK7FGJL that appeared on the VK7 Regional News. It is gratifying to receive such acknowledgement, considering the time volunteered by assessors and training facilitators. This truly makes it all worthwhile.

At the NWTR&TVG meeting in June there was discussion and a decision made to investigate the introduction of a student class of membership given the influx of new student amateurs.

Tony VK7AX has moved to the new BATC Video Streamer for his DATV video presentations. This new streamer has a much larger



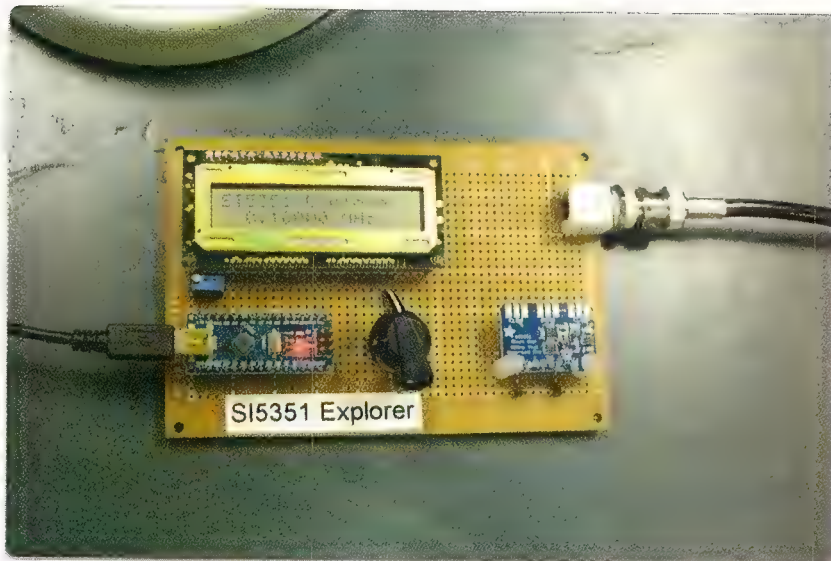


Photo 2: Arduino controlling digital frequency synthesiser built by Sean VK7FAZE (Photo courtesy of Justin VK7TW).

viewing screen and simplified Chat Box. Streaming is taking place at a resolution of 1280 x 720 pixels in widescreen. The stream can be found at: <https://batc.org.uk/live/vk7ax>. A reminder that the WIA National News and the VK7 Regional news can be viewed as a slide show with the associated audio file on the new stream.

### Northern over 70s SOTA Activists

The Northern over 70s SOTA activists never stand still. Before the winter weather set in they were back up Legges Tors – Tasmania's second highest peak fixing the Ben Lomond Channel 3 CB Repeater. This repeater has a long association with amateurs in North East Tasmania and serves the skiing and mountain users in this popular location.

It was first constructed back in the early 1980s by Warren VK7KVA and helpers. At 1572 m winter presents many issues with regular flag ice and damaged solar panels. Later Barry VK7BE donated a UHF transceiver which formed part of the co-located amateur UHF repeater VK7RBH.

Warren VK7KVA, AI VK7AN, Ross VK7ALH, Wayne and Peter VK7PD climbed to the repeater site

to repair the antenna system. A new phasing harness for the four folded dipoles was installed with some improvisation on the day. Tests were undertaken and performance was back to normal. Thanks to all involved on the day and Peter VK7PD for these details.

### Northern Tasmanian Amateur Radio Club

NTARC congratulates the following who passed their Foundation

Licence assessments and upgrade - James McElwee who is VK7FJAM, John Deegan who is VK7FJFD and Peter Sulzberger VK7FPMS who successfully upgraded to Advanced and is now VK7SP. Thanks to Assessor Peter VK7PD and Learning Facilitator Idris VK7ZIR.

A reminder that the new 70 cm analogue repeater on Mt Arthur VK7RJG has an input frequency of 431.550 MHz. Much work has been done on the cavities thanks to David VK7JD and these have been installed thanks to Mark VK7FMWT and the repeater is performing well.

Recently Wednesday night technical sessions have started at NTARC and they are going gang-busters! Some of the recent activities include: Peter VK7KPC with a Xiegu X108G HF radio running WSPR on magnetic loops. Peter VK7FPWS working with a Raspberry Pi running AIS for shipping movements. Kevin VK7KJL, Simon VK7FSRM and Ebenezer VK7AT playing with computers. Peter VK7PD has been playing with a new audio interface for the station's FT-990. Tom VK7FTOM was checking handheld power outputs and Bernie VK7BR brought in his BITX home

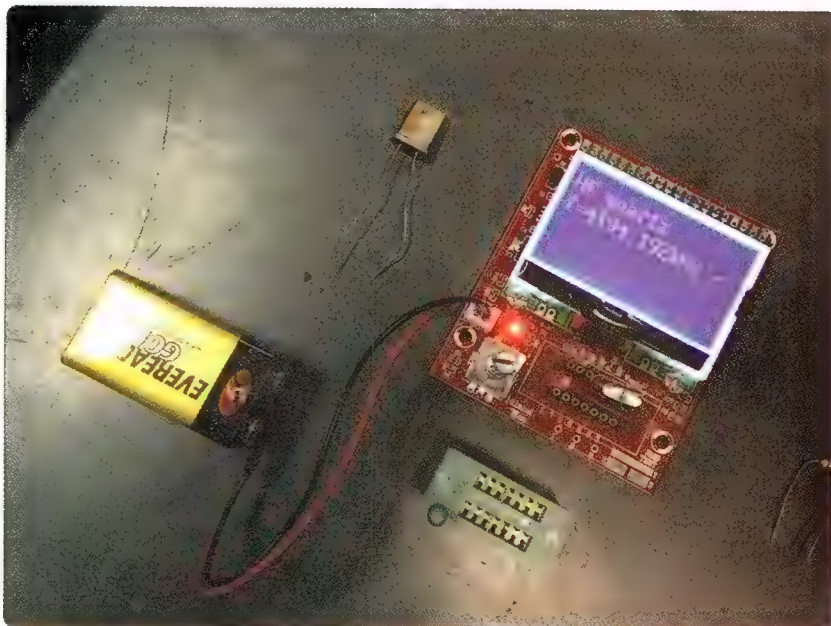


Photo 3: Chinese component tester with crystal on test. (Photo courtesy of Justin VK7TW).



brew transceiver. Idris VK7ZIR was playing with his Icom IC-9100 and installed the 23 cm module. Ross VK7ALH brought along a marine band transceiver built in Hobart by The Hobart Radio Clinic. Stuart VK7FEAT was busy constructing his 2 m dipole antenna. Colin VK7ZCF and James VK7FJAM worked on programming several radios using the CHIRP and Zastone software. Stefan VK7ZSB was constructing some cables for the Equine Endurance State Championships being held at Sassafras.

June 8-9 saw the Tasmanian Equine Endurance Riders Association State Championships event held at Sassafras in the North West. A huge thank you to Ken VK7KKV and XYL Bet, Wayne VK7FWGH and XYL Meg, Peter VK7KPC, Bill VK7MX, André VK7ZAB, Idris VK7ZIR, Stefan VK7ZSB, Lorraine XYL of VK7KTN and long distance member Peter VK7SP from Switzerland providing software support.

There were a 100 riders competing with 160 km, 95 km and 40 km events. There were some challenges with last minute track changes, wet conditions, radio coverage and RFID checkpoints not talking back to base. Even considering the issues experienced on the weekend it was still a success and thanks to all involved. Thanks to Norm Thorley VK7KTN for that report.

## Radio and Electronics Association of Southern Tasmania Inc

<http://www.reast.asn.au/>

We congratulate John Wallis who successfully passed his Foundation Licence training and is eagerly waiting for his callsign.

There have been some additional changes to the REAST committee with Secretary Scott VK7LXX leaving. The committee thanks Scott for his huge contribution and many hours of work put into the club over that

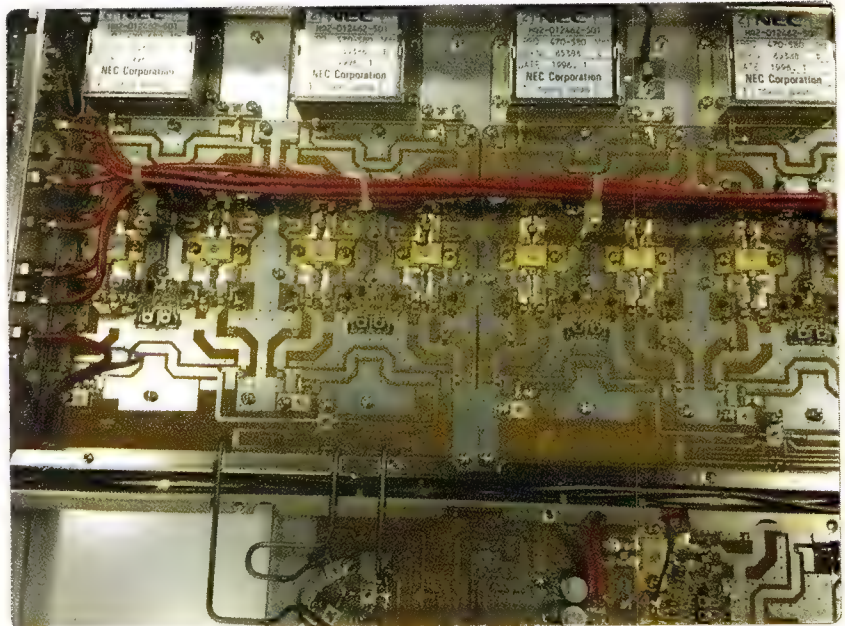


Photo 4: NEC TV UHF transmitter module (Photo courtesy of Justin VK7TW).

last few years. The Committee composition is now: President Sean VK7FAZE, Vice-President Clayton VK7ZCR, Secretary Tony VK7VKT, Treasurer David VK7FABE and committee members Larry VK7WLH and Barry McCann.

The May presentation was given by Sean VK7FAZE on the Arduino platform. This microcontroller comes from an Italian university as an educational teaching computing platform. It has an easy to use multi-platform Integrated Development Environment. The libraries are extensive and freely available. Sean demonstrated a Digital Signal Synthesiser and a WIFI enabled home sprinkler system. The video of this presentation is available on the REAST YouTube channel and is well worth a look.

The June presentation night saw the author give presentations on the WIA Licence Condition Determination Submission and the WIA AGM - Beyond 2020 presentation. The submission was put together by the WIA Spectrum Strategy Committee and it in five sections – General Principles, Foundation, Standard, Advanced licences and Remaining Issues. There was some good discussion

and questions. The AGM weekend Beyond 2020 presentation was well received and there were many great questions and suggestions.

The experimenter's nights are still popular and attract many people. Some of the items have been Ron with his RTL-SDR Kit and LCR/semi-conductor tester – cheap as chips and will test almost anything! Murray VK7ZMS and Richard VK7ZBX programming up an Icom Marine HF radio. Richard also brought along a very nice 500 W NEC power amplifier that was sourced locally. Covers were removed and plans made for possible usage within the amateur community. The author with his GPS Disciplined Local Oscillator unit for 10 GHz and Microwave YIG Oscillator. The new DATV studio is coming along with planning well underway. Our new Foundation licensee Paul Pruss VK7FPCL was playing with a Yaesu FT7. Winston VK7WH brought along an interesting network controlled power switching unit that he is using on his remote transceiver site. These nights happen every Wednesday night from 7:30 pm in the Queens Domain Clubrooms, Hobart.





# VK3news Geelong Amateur Radio Club

Tony Collis VK3JGC

## ANZAC Commemorative Badge

The commemorative badge, shown in Figure 1, was given to all GARC members by Barry VK3SY.

This gesture is in appreciation to all, who in any way, assisted in the GARC ANZAC Centennial Projects over the last four years, funded by a Federal Government's ANZAC Community Grant.

These included:

- The V13ANZAC First Shot of the Great War activation,
- The Morse to Magnetron display of Military Communications Equipment 1914 – 1960
- The VK100ANZAC Commemoration of the Battle of Fromelles activation in concert with the Radio Club Du Nord de la France F8KKH.

Recipients will also include Patrons from other organisations such as the WIA, Corps of Signals Museum at Watsonia, Osborne House Committee of Management, City Of Greater Geelong, Military re-enactment Society and others.

As can be seen, the badge incorporates the *clasped lightning* insignia which was first devised by Lt Col Lionel Charlton on 19 January 1917. It is now synonymous



Figure 1: The GARC ANZAC Commemorative Badge.



Photo 3: Rex VK3ARG with his WIA 10 year Certificate.

with signals and although adopted in Australia primarily within the RAAF, it has been embraced in one form and another by all Services.

## WIA 10 year Assessor Certificate

In recognition of the work carried out by Rex VK3ARG, one of the GARC's Training Coordinators, the WIA has awarded him a certificate recognising his ten years in the role.

## Resumption of Broadcasts on the GARCnet

Bert VK3TU, Dennis VK3BQZ and Peter VK3WK have been working towards re-instating the link between Mt Anakie and Beech Forest and putting GARC Net back on the air. Dennis is also working with Nick VK3TY to finalise the hardware and minor software tweaks on the IRLP node in readiness for connection to the network once the performance of the Anakie - Beech Forest link is fully commissioned.

The GARC then plans to resume the nightly amateur radio news

re-broadcasts at 9.00 pm each evening, hopefully on or before the end of August 2018.

The format of each broadcast will comprise an introduction (fixed), GARC syllabus/news (max 2 minutes - updated monthly), followed by the news re-broadcast.

The GARCnet team are in the process of getting formal approval from the following organisations to permit re broadcasts on file of their news services; the WIA, ARRL, RSGB, NZART, RAOTC, News West and the SARRL.

Craig VK3CRG (Bay FM announcer) will professionally produce all audio files from the scripts provided by the GARC; these files will then be uploaded to a special section on the GARC website from where the IRLP node will automatically download and play according to a pre-defined schedule.

Supplementary to the above, Peter VK3WK and Dennis VKBQZ have now established internet access at Mt. Anakie, at VK3RGL 70 cm, for the purposes of DMR.



# Convention Dinner and Presentation

WIA Board

The convention dinner and presentation was held at the Waterfall Restaurant in the SeaWorld Convention centre on the Saturday night.

It was attended by well over 150 people and there was a great feast of seafood and salads and much more flowing all night. The guest speaker was Jeff Johnson VK4XJJ. Jeff covered his heroic walk from Spencer Gulf to the Gulf of Carpentaria in pictures and wonderful stories.

Jeff was 66 years young when he left Port Augusta on 5 April 2007 and arrived at Kurumba, Queensland on Sunday 2 September; a walk of approximately five months duration.

Jeff took a Yaesu FT-817ND and 1/2 wave dipole which he strung up between a couple of trees every evening. He used 40 m mostly and talked regularly with brother Bill VK2FWGJ in Newcastle and Roger VK4BNQ located at Gympie. To achieve 5 watts, Jeff carried a 2.5 AH battery. He charged this and his satellite phone with a solar panel



Photo 1: The solar panel with clamp that made it the whole journey (Photo courtesy of Jeff Johnson VK4XJJ.)

that he wore around his neck. Jeff related a funny story about the solar panel going intermittent and he found a hardware store and bought some small clamps and found the part of the solar panel he could clamp to make it charge the batteries. That clamp lasted the five months of the trip!

There are several reasons for Jeff's walk but one of the most important was to raise funds and awareness for the Deaf Blind Association in NSW. He walked the whole trip carrying all he needed in

his back pack. This included food, water, clothing, a small tent, thermal sleeping bag, satellite phone, radio equipment, antenna and a battery big enough for reliable communications. At night, the temperatures dropped to around zero degrees Celsius and so warm bedding and clothing were essential. The backpack was about 28 kg. The water he carried had a mass of 8 kg.

Jeff shared some great photos of the trip along with many of the people

who he met along the way. He was met at Normanton nearing the end of the trip by his brother Bill with his car. During that night Jeff's car was stolen by some local youths; fortunately the police caught them and the car was return with only barb wire scratches.

A huge thank you to Jeff for this inspiring presentation.

As the night drew to a close Jeff drew the major prize for the weekend: an Icom IC-7300 and the winner was Trent VK4TS. Congratulations Trent.



Photo 2: Jeff Johnson VK4XJJ (Photo courtesy of Marcus VK5WTF).



Photo 3: L2R Trent Sampson VK4TS and WIA Director Aidan Mountford VK4APM (Photo courtesy of Marcus VK5WTF).



# Demonstrations and Traders Day

Marcus Berglund VK5WTF

They say a picture says a thousand words...



Photo 1: Emergency Services command post vehicles.



Photo 2: Trader display.



Photo 3: Trader displays.



Photo 4: Doug VK4OE on microwaves.





Photo 5: Rex VK7MO lining up for 10 GHz EME.



Photo 8: 122GHz transceiver used for the record attempt.



Photo 6: VK5WTF W5LUA -21  
W5LUA VK5WTF R-19.



Photo 9: Peter VK4EA on 47GHz.



Photo 7: Doug VK4OE and Iain VK5ZD.



# WIA QSL Bureau update

John Seamons VK3JLS

## The WIA Inwards QSL Bureau Service

Recently, the VK QSL Bureau came under criticism on a DXpedition website, and the DXpeditioners own *QRZ.com* webpage, where some comments were made and then shared on a Social Media website. The original comments were factually incorrect and I wish to set that record straight, in order to ensure that all members of the WIA, prospective members and non-members, are fully aware of the services provided by the WIA Inwards QSL Bureaus.

The factually incorrect comment read as follows:

*"Unfortunately NO INCOMING BUREAU is available as the Wireless Institute of Australia (WIA) refuses to process my incoming cards (politics....at the expense of amateurs everywhere!!)*

*Please DO NOT send anything via the Bureau system as it will not reach us!"*

The facts are: The WIA QSL Bureau processes **ALL** incoming cards, whether they are for members of the WIA or not. In terms of any incoming QSL cards, the process is quite clear:

Any cards marked, for example, VK3ABC, or "VIA VK3ABC", will be forwarded to the VK3 Incoming QSL Bureau. At the relevant State/Territory Bureau:

- Cards received for WIA members will be distributed based on agreed arrangements with the individuals (e.g., posted via SASE, delivered to Radio Clubs, or picked up at the Bureau, etc.);
- Cards received for non-members of the WIA, will be stored (unsorted) at the relevant State/Territory Inwards Bureau. These

cards are available for perusing and collection by non-members at the convenience of the Inward QSL Bureau Manager. Any cards that are not collected by non-members, will be held in the State/Territory Bureau for a period of time determined by the Bureau Managers, but generally for no more than 12 months.

This process is fully in line with IARU recommendations that:

1. QSL Bureaus worldwide should make every effort to enable incoming QSL cards to be made available to both members and non-members; and
2. Where appropriate, a cost recovery basis should be used to compensate for any costs incurred in delivery to non-members.

The WIA State and Territory QSL Bureaus will always make every attempt to deliver correctly-addressed QSL cards to members, and make available correctly-addressed QSL cards to non-members.

## VK9, VK0 and Special Event Stations

Incoming cards for VK9, VK0 and Special Event stations continue to provide a heavy workload in the National Inwards Bureau. In the first six months of this year, we received over 1500 cards for these prefixes, with some cards dated prior to 2010. We make every attempt to deliver correctly-addressed QSL cards; sadly, many cards are addressed incorrectly from amateurs world-wide. To contain the Bureau postage costs, when QSL cards are incorrectly addressed they will be placed in our archives.

It begs the question, "what is an incorrectly addressed QSL card?",

and we look to *QRZ.com* to provide an answer.

Where *QRZ.com* clearly states "No Bureau Cards", "QSL only Via XXXXX", "QSL Direct Only", "No Paper QSL" or similar wording, such cards will be archived and not actioned. Late last year, a number of overseas QSL Bureaus were emailed and advised of this decision requesting them to advise their members to check *QRZ.com* before sending any cards to VK9 or VK0 callsigns. This has been met with quite positive responses from some of the overseas bureaus, with our email to be included in some journals, members to be advised, and even some Outgoing Bureaus to check for QSL managers themselves and only sending such cards to our Bureau as a last resort.

Where a card is correctly addressed (e.g., VK9ABC via DL3XYZ), but sent to the VK Bureau instead of the DL Bureau, the card will be sent to our Outwards Bureau, where it will be re-directed to the correct overseas bureau.

We will continue to re-direct cards where they have been inadvertently delivered to us in error (e.g., cards for VU, VE, V65, etc.), or where they may have been "stuck" to a VK card during sorting.

We continue to make contact with the leaders of DXpeditions to VK9 and VK0 requesting them to clearly indicate on their webpages that cards must not be sent to the VK Bureau, and again these requests have been received in a very positive and obliging manner.

With at least seven DXpeditions to various VK9 locations this year, it will be interesting to see what effect our requests will have on the number of incorrectly addressed cards received at the National Inwards Bureau.



## Special Event Station VI50IARU3

This call sign is currently quite active around Australia. Anyone who has worked any of the IARU50 stations from within Region 3, are advised to check [QRZ.com](http://QRZ.com) for QSL details. There will be no printed QSL cards for VI50IARU3 (or other IARU50 stations), and everyone is urged to download their QSLs on-line. Details can be found on the [QRZ.com](http://QRZ.com) web page. Do not send any QSLs to the VK Bureau, as they will not be answered!

## DXpeditions and Special Event Stations

We distribute over 50,000 cards to VK amateurs annually, and send over 20,000 cards to overseas bureaus. This service is provided at **no cost** to WIA members (unlike some other overseas bureaus), and we will continue to contain the Bureau costs (i.e. postage) as much as possible. The current QSL

Bureau policy means that some high usage DXpedition and Special Event stations may have to pay to use the **Outward Bureau** service.

This has caused concern among some owners of these events. To put some perspective into this, consider the following:

- During the period 2014-2017, there were approx. 143,000 cards posted from our Outwards Bureau;
- Within those 143,000 cards, there were 51,000 cards from DXpedition and Special Event stations;
- Late last year, the Outwards Bureau was holding 14,000 cards from just 15 stations (8,000+ cards from 12 Special Event Stations, and 6,000 cards from 3 DXpeditions);
- Thus, more than 36% of our outgoing postage costs come from a considerably smaller percentage (maybe 1-2%) of the total users of the WIA Bureau.

While DXpeditioners and Special Event stations may feel aggrieved that they are now being asked to pay for Outwards Bureau postage costs, I would expect that the greater majority of WIA members support our attempts to keep the costs contained in this manner, so that the current free QSL Bureau service for the ordinary amateur remains.

## Finally

If anyone has any comments or questions related to the QSL Bureau activities, I encourage you to contact myself or any of the State/Territory QSL Bureau Managers in the first instance. Let's avoid any further "Fake News".

**John Seamons VK3JLS**  
*Inwards and National  
QSL Manager*

# Hamads

## FOR SALE - VIC

14 m self-supporting tower galv ex windlight incl mast +brg \$150

16 m galv Hills Cyclonic winch up tilt over \$190

Yaesu FRG8800 HF rx 500 kHz 30 MHz sno:9E330030 ex cond \$150

FT1000MP HF tx sno:6f100295 ex cond orig pkg \$700

TET TE33 3band beam good cond \$100

Yaesu FT757 sno 5j221055 FC757 auto ant tuner + FP707 hd pwr supply, al matching units, manuals and mic, DC lead \$460

PA amp 30 W sno:44625929 new in carton \$100

PA amp 15 W 12V 240V \$50

Electronic multimeter Leader Im75a \$40

Contact Bill VK3LY on 0409 954 491

## FOR SALE - VIC

Heathkit HW-8 QRP CW rig with power supply, headphones and manual \$100 plus postage.

For Sale Yaesu FT1500 2 m FM with mic \$100 plus postage  
Jim VK3KE on 0438 671 253

## FOR SALE - QLD

One (1) MFJ 862 swr wattmeter, suitable for 144, 220, 440 MHz, new in carton, never been used. One (1) MFJ 269c antenna analyser used once, perfect condition, plus carry-in case plus three (3) dummy loads for calibration.

Kenwood TS 480HX tx/rx, not working but in good condition.

Merv VK4DV QTHR phone 0448 985 537 or email [vk4dv1@gmail.com](mailto:vk4dv1@gmail.com)

## WANTED - SA

Kenwood TS-130V low power HF transceiver in good physical condition and excellent working order. Not for a collection but will be used on air. Information re any on-board filters, accessories available etc will be appreciated.

Please contact Doc VK5BUG via [d.wd@bigpond.com](mailto:d.wd@bigpond.com) in the first instance. Many thanks.



# RAOTC QSO PARTY 2018S

Ian Godsil VK3JS

All licensed Australian Amateur Radio Operators are invited to participate in the annual QSO PARTY sponsored by the Radio Amateurs' Old Timers' Club Inc.

This is not a contest, just an on-air meeting of RAOTC Members and fellow Amateurs.

However, we do invite you to submit a log of your contacts for listing on our web page.

**Date:** Saturday, 15<sup>th</sup> September 2018

**Time:** 0500 – 0700 UTC in two one-hour blocks.

**Bands:** 40 and 20 metres.

**Modes:** CW; AM; SSB

## Suggested Frequencies

**40 metres** CW 7020 kHz, SSB 7080-7090 kHz, AM 7120 kHz

**20 metres** CW 14040 kHz, SSB 14160-14170 kHz, AM 14150 kHz

**Call:** CQ OT or CQ Old Timers

**Exchange:** Callsigns and RST report.

- one point per contact
- add 25 points for using a radio 25 years or more old.

**Logs:** In order to acknowledge your participation, you are invited to send a log of your contacts, so that a list may be compiled for publication in the monthly broadcast and on the RAOTC web page. Your list should show the name and postal address of the operator submitting the log, the number of contacts with callsign, RST exchanged, points claimed and whether you used an older radio or not.

**Send Logs** to: Secretary, RAOTC, PO Box 107, Mentone, Vic, 3194

or via email to [raotc@raotc.org.au](mailto:raotc@raotc.org.au) by Friday 21 September, 2018.

If sending by email and no acknowledgment is received, please resend.

**Certificates** will be issued to:  
scorer with highest total contacts;  
highest scorer using an old rig.

**Find these Rules on the Web:** <http://raotc.org.au/>

## Over to you

### Morse oscillator

Sir,  
I have a request: Would any of your readers have a Morse oscillator to donate or sell? Not too big a unit.

Last time I used one was in Port Moresby about 1954.

Reason for my request is that my bug looks accusingly from its glass cabinet every time I walk past (nostalgia creeps in). I'm not a ham but Morse code kept me in employment for many years.

A bit of a summary:

Air Force 1943: Air crew training in Australia and the UK. Back in Australia, various clerical and public relations in car industry. Unsettled (most of returning service people probably were). Thought a job as a radio officer was a good idea, but thought of big vessels appealed. But that required a marine radio officer's certificate and the big ships appealed more.

Lost/wasted time in the UK. Eventually got a job with Cable and Wireless reading cables and press releases. A workmate had a job in Erith, Kent, making asbestos pipes. Stayed there until I had enough money to

pay for the radio course, the usual practice was to get a second class certificate and off you went. I got this one and 6 weeks later sat for the first class certificate and got it. The higher qualification probably got me a bigger ship. It was a P and O SS Chusan. Ran to the "Far East" as it was then known. 4th officer, 3rd signed off next trip and I became his replacement (no extra pay). Did four trips and a couple of cruises including Iceland. Still trying to save money to get home.

Next step (my certificate certainly helped) Portishead Radio, now sending traffic to ships instead of the other way. "GRL" might trigger a few memories...

Contacted AWA and they were agreeable: new Ampol tanker being built or a 300 tug. "I'll take either" – I got the tanker. This is taking a lot longer than I thought.

Fronted Civil Aviation, was accepted (after a Morse test). Spent 33 years. Our original title was "Aeradio" officer. Four years in TPNG. Being a single person we were subject to transfer more than married staff. Of the 12 outstations, I served on nine. Aeradio duties were varied: accepting flight plans from pilots

and relaying the details to other flight areas through which the pilot would pass, arrange radio frequency transfer times, warning of conflicting aircraft, ensuring that the aircraft reported by radio at nominated reporting times, weather information, overall aircraft safety – this could entail failure to report in flight, engine malfunction. Differing stages from "Uncertainty" through to "Distress". All were passed to SAR headquarters, usually to our capital city.

This was to indicate how Morse affected my career, so chop it up or use it.

Got carried away. Must mention my fantastic wife who is supporting me in these changes and our beautiful family.

NOW ABOUT THAT UNUSED MORSE OSCILLATOR..... I'm 93 but the fingers still work.

Regards,  
Ted Jolley  
21/12-22 Cutts Ave  
Croydon 3136

*Ed: A local Club has been contacted and is working to solve Ted's problem.*







## Contributions to *Amateur Radio*

*AR* is a forum for WIA members' amateur radio experiments, experiences, opinions and news.

Your contribution and feedback is welcomed.

Guidelines for contributors can be found in the AR section of the WIA website, at <http://www.wia.org.au/members/armag/contributing/>

Email the Secretary:  
[armag@wia.org.au](mailto:armag@wia.org.au)

## About Hamads

- Submit by email (**MUCH PREFERRED**) or if written and mailed please print carefully and clearly, use upper AND lower case.
- Deceased estates Hamads will be published in full, even if some items are not radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from those who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising on these pages Contact [admanager@wia.org.au](mailto:admanager@wia.org.au)
- Copy to be received by the deadlines on page 1 of each issue of Amateur Radio.
- Separate forms for For Sale and Wanted items. Include name, address STD telephone number and WIA membership number.

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More information and a membership application are available from our web site at [www.raotc.org.au](http://www.raotc.org.au) or write to:-  
**PO Box 107, Mentone VIC 3194** or  
email:- [raotc@raotc.org.au](mailto:raotc@raotc.org.au) or  
call Secretary: Ian Godsill VK3JS  
on 03 9782 6612 .

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\*Available now with SmartSDR v2.0. Model shown is FLEX-6600M, Delivery times may vary contact Future Systems for more details.

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